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Potentially Preventable Hospitalizations by Legislative District

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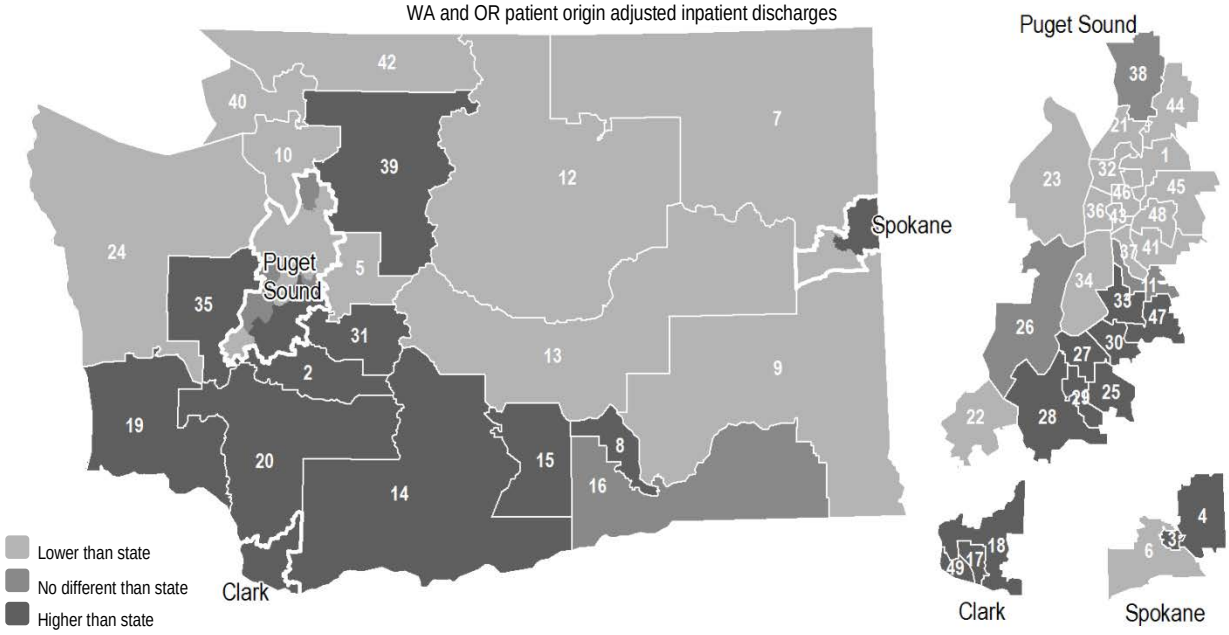
The Agency for Healthcare Research and Quality (AHRQ) has developed a number of health care-related quality measures including one set called the Prevention Quality Indicators (PQI). Consisting of 11 individual and four composite PQIs, these measures identify a set of hospitalizations that, in theory, are potentially preventable through primary or secondary health care interventions such as vaccinations, regular primary-care provider visits and common prescription medications.

The PQI measures are not a reflection of the care provided in a hospital. Instead, they act as an indirect measure of a community's primary health care system and its population's ability to access and utilize appropriate, timely and affordable preventative and primary care services. As such, these measures are sometimes referred to as ambulatory care sensitive conditions.

Figure 1
All Conditions Composite (PQI 90)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient origin adjusted inpatient discharges



All Conditions Composite PQI

For 2013-15 there was a total of 146,898 inpatient discharges falling within the All Conditions Composite PQI measure, averaging 48,966 cases per year. The total costs for these hospitalizations equaled $1.6 billion or $487 million per year. It should be noted that costs, which generally form the foundation for establishing charges and negotiating reimbursements, are typically less than the amounts charged and ultimately paid. They are used here to provide a relative indicator of the financial implications of these hospitalizations.

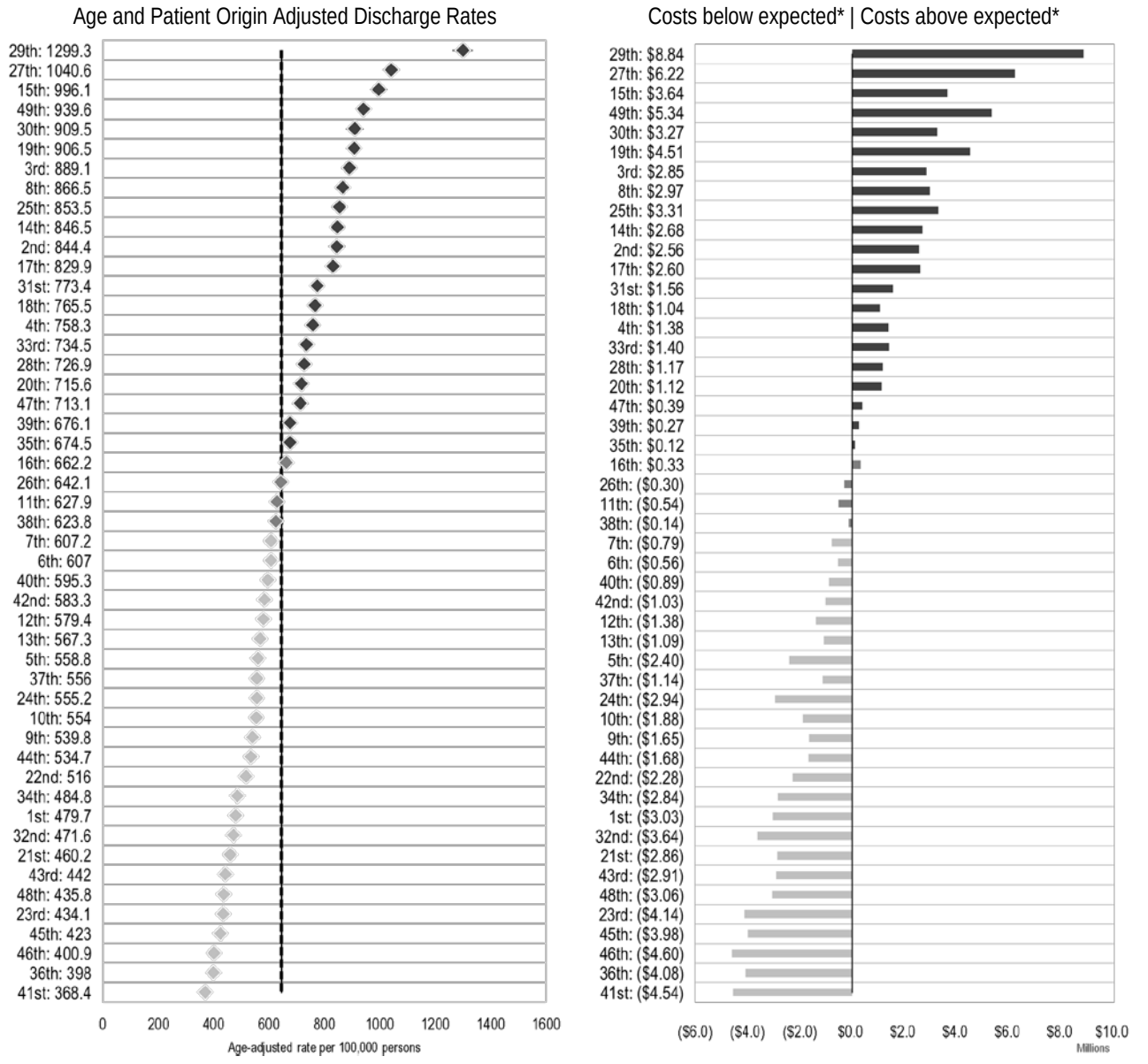
Figure 1 is based upon each district's patient origin adjusted hospitalization rates for these conditions. As can be seen, nearly half the districts have rates that are significantly higher than the state's and nearly half have rates that are lower. This divide follows a distinct geography pattern: Districts in southwest and south central Washington and south Puget Sound have high rates, while districts in north Puget Sound and those in northern and eastern Washington have low rates. The few districts not fitting into this pattern are the 22nd, which has a low rate among the high rate districts, and the 3rd, 4th and 39th districts, which have high rates

among the low rate districts. An additional handful of districts—the 11th, 16th, 26th, 35th and 37th—have rates that do not significantly differ from the state's.

Besides the financial, medical and emotional stresses these potentially preventable hospitalizations pose for the patients and their families, they also pose pronounced financial impacts on society at-large: More than a third of the overall statewide costs for these conditions, $172 million per year, could have been saved if the hospitalization rates in the high rate districts were simply the same as the state rate.

Figure 2 provides a rank-ordered look at the districts' average annual age-adjusted rate, from high to low, for the All Conditions Composite PQI measure. It also shows the average annual excess costs or savings that would be incurred in each district if the hospitalization rate in that district was the same as the state's.

Figure 2
All Conditions Composite (PQI 90)
Age-adjusted rates and excess costs or savings by legislative district
2013-15 combined



* Millions in cost-to-charge ratio adjusted dollars

As can be seen, the rate in the 29th district, 1,299 per 100,000 persons, is clearly an outlier—and twice the overall statewide rate of 645 per 100,000. The 27th has the second highest rate, 1,041 per 100,000, and the 15th has the third, 996. With the exception of the 49th, which has the fourth highest rate, the rates in these three districts are significantly higher than the rates in all of the remaining districts.

The estimated excess costs for these hospitalizations is also worth noting. Compared to what would be expected, an additional $8.8 million per year is spent on the residents of the 29th district for these potentially preventable hospitalizations. For the 27th, the excess cost is $6.2 million per year, and for the 15th, $3.6 million.

Conversely, the rate in the 41st district, 368 per 100,000, is only three-fifths of the statewide rate. The saving incurred in that district equals $4.5 million per year. Similarly, in the 36th, with a rate of 398, and the 46th, with a rate of 400, the savings there equal $4.1 million and $4.6 million per year, respectively.

Summary of Findings

Figure 3 on page 4, is a heat map indicating which districts are higher, lower or not significantly different from the state for each PQI assessed. Of the 49 legislative districts, only the 29th is higher than the state for all of the PQIs (and, in fact, the 29th is ranked higher than all the districts for each of the composite PQIs and for nine of the eleven individual ones). Three other districts, the 15th, 27th and the 49th, are higher than the state for all but one PQI measure.

In contrast, two districts, the 41st and the 46th, are lower than the state for all of the PQIs. Two additional districts, the 36th and the 48th, have rates lower than the state for all but one PQI.

Focusing on the composite PQIs only—that is, All Conditions, Acute Conditions, Chronic Conditions and Diabetes—13 districts have rates higher than the state and 12 have rates lower than the state for all four. Below is a list of those districts, including a selection of cities and towns within them.

Districts with **high rates** for all of the composite PQI measures:

2nd	Yelm, Eatonville and the Nisqually Indian Community
3rd	Spokane City
4th	Spokane Valley
8th	Richland and Kennewick
14th	Naches, Yakima, Goldendale and most of the Yakima Indian Reservation
15th	Selah, Union Gap and Sunnyside
17th	Suburban Vancouver including Cascade Park, Mill Plain, Brush Prairie and Meadow Glade
19th	Longview, Kelso, South Bend, Westport, Aberdeen and Montesano
27th	Tacoma
29th	South Tacoma, Lakewood and Spanaway
30th	Federal Way, Milton and Algona
31st	Enumclaw, Sumner and Bonney Lake
49th	Vancouver

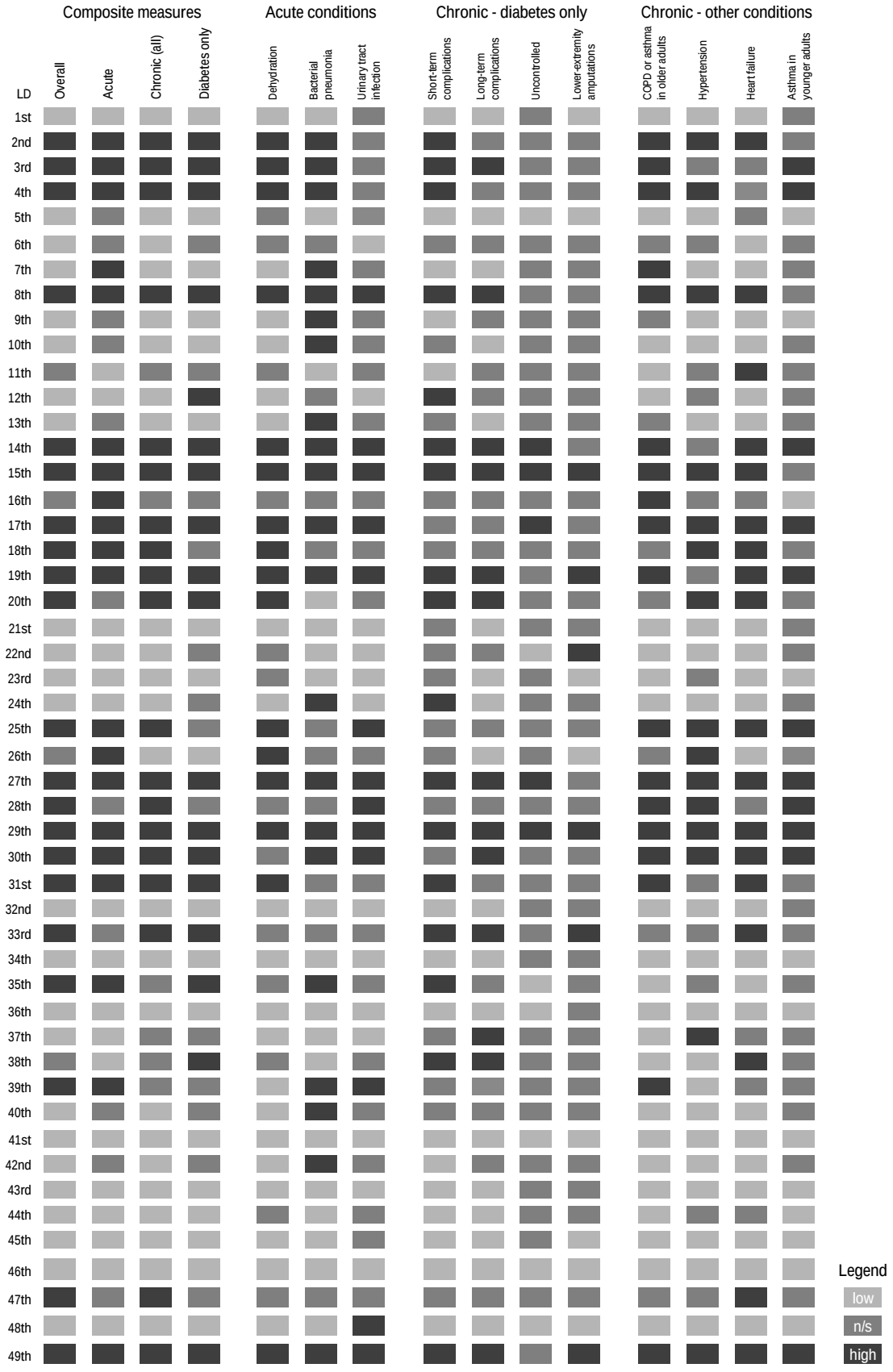
Districts with **low rates** for all of the composite PQI measures:

1st	Mountlake Terrace, Bothell and Manitou
21st	Edmonds and Mukilteo
23rd	Silverdale, Port Gamble and Bainbridge Island
32nd	Lynnwood and Shoreline
34th	Vashon Island, White Center and West Seattle
36th	Northern Seattle, Ballard, Queen Anne and Magnolia
41st	Bellevue, Mercer Island and eastern Lake Sammamish environs
43rd	Central Seattle, Capitol Hill, East Lake, Wallingford and Fremont
44th	Mill Creek and Lake Stevens
45th	Kirkland, Woodinville, Sammamish and Duvall
46th	Laurelhurst, Northgate, Olympic Hills and north Lake Washington
48th	Redmond, Medina and western Lake Sammamish environs

Figure 3

Summary of PQI rates significantly higher, lower or no different from the statewide rate by Legislative District

2013-15 combined



Looking more closely at the details outlined in the profiles of each PQI, some selected findings include:

- *Acute Conditions Composite* (PQI 91) – In the 29th, the hospitalization rate for this composite measure—which includes dehydration, bacterial pneumonia and urinary tract infection—is nearly twice the state rate, and together with the 15th and 19th, is also significantly higher than all the other districts except the 27th which is fourth highest. Costs in excess of what would be expected for those three districts with the highest rates equal $6 million per year. In contrast, the rate in the 36th is only 60 percent of the state rate and annual costs there are $1.2 million less than expected.

- *Bacterial Pneumonia* (PQI 11) – As seen in the Acute Conditions Composite PQI, which this disease is a subset of, rates in the 19th, 15th and 29th are among the top three. However, rates for this disease are also high among the rural districts in northern and eastern Washington where, for nearly every other PQI, they are typically lower than or no different from the state's rates.

- *Chronic Conditions Composite* (PQI 92) – Consisting of four diabetes-related and four other chronic conditions, the rate for this PQI in the 29th is more than twice the state rate and is significantly higher than all other districts. Adjacent to the 29th is the 27th where the rate is second highest and also significantly higher than all the remaining districts. Together, these two districts cost $12 million per year more than what would be expected. In contrast, the rate in the 41st is about half the state's and cost nearly $4 million less per year than would be expected.

- *COPD or Asthma in Older Adults* (PQI 5) – While most of the PQIs pertain to adults ages 18 and older, this measure focuses on a narrower population, adults age 40 and older; nonetheless, it is still the second most prevalent condition among the Chronic Conditions Composite PQI. Rates in the 29th are more than 2.5 times the state rate and, together with the 27th, are significantly higher than all the remaining districts. Excess costs for these two districts alone are $3.5 million per year. Rates in the 23rd are the lowest at about 40 percent of the state's, and costing $1 million less per year than would be expected.

- *Heart Failure* (PQI 8) – The rate in the 29th is, once again, twice the state rate and significantly higher than all the other districts. Second highest is the 27th. Costs in excess of what would be expected for this condition in these two districts alone equal $4.4 million per year. The rate in the 7th is the lowest, about 60 percent of the state rate, and cost $1.3 million less per year than would be expected.

- *Diabetes Composite* (PQI 93) – Consisting of four diabetes-related conditions, the rate for the 29th is the highest and twice the state rate. The second highest is the 3rd, and third highest is the 27th. Costs in excess of what would be expected for these three districts combined equal $3.8 million per year. The 41st has the lowest rate, about 40 percent of the state rate, and costs are $1.2 million less per year than would be expected.

Given these disparities and all their implications, this report profiles each of the individual and composite PQI measures by legislative district, comparing their rates to the state's and one another, and estimating their corresponding excess costs or savings.

In doing so, policy makers, health departments and community leaders—statewide and local—may be able to use these findings to help in prioritizing those districts and regions most at risk. Further, as health care reform evolves or changes, this report may serve as a baseline in assessing improvements or retrogressions in access to and use of preventative and primary health care services.

Background and Methods

AHRQ groups the PQI measures into two categories: acute and chronic conditions. The acute conditions include hospitalizations for dehydration, bacterial pneumonia and urinary tract infection. The Acute Conditions Composite PQI includes these three conditions combined.

The chronic PQIs include four diabetes-related conditions—short-term and long-term complications from diabetes, uncontrolled diabetes, and lower-extremity amputations among patients with diabetes—and four additional conditions: chronic obstructive pulmonary disease (COPD) or asthma in older adults, hypertension, heart failure, and asthma in younger adults. The Chronic Conditions Composite PQI includes these eight conditions. In addition, the four diabetes-related PQIs are combined creating a subset composite measure, the Diabetes Composite PQI.

AHRQ SAS QI v6.0.1 software was used in identifying PQIs discharges coded with either ICD-9 or ICD-10 codes.[1]

Because the PQIs are population-based, age-adjusted rates[2] are calculated for each legislative district using the patient's ZIP code of residence to identify which district they reside in. Ninety-five percent confidence intervals (CI) are calculated for all the rates, and these are used to determine if a district's rate is statistically significantly different from the statewide rate; those that do differ are deemed high or low.

In instances where a ZIP code boundary overlaps two or more districts, a patient is *divided* among those districts proportionate to the distribution of the general population. Thus, for instance, if 80 percent of a ZIP code area's population resides in one district and the remaining 20 percent resides in another, 0.8 of a patient discharged from that ZIP code is allotted to the first district and 0.2 is allotted to the other.

The hospital inpatient discharge data include all Washington residents discharged from community hospitals in Washington and Oregon states. Inpatient discharges from federal hospitals, such as the Veteran's Administration Medical Center in Seattle or Madigan Army Medical Center outside of Lakewood, are not included. Since these types of institutions treat military retirees and active-duty dependents, rates in some legislative districts may be lower due to an undercount of those cases.

For 2013-15 discharge data, we used hospital-specific cost-to-charge ratios (CCR), provided by AHRQ, to convert hospital charges into costs. Because CCRs for 2015 are not currently available, we assessed the average annual change in CCR for the previous five years and the average annual CCR in estimating them. Similarly, for those few hospitals missing CCRs for 2013 or 2014, we used the trends and averages from those years where the CCRs were reported in estimating them. Just as was done with the case counts, if a ZIP code boundary overlaps two or more districts, the costs for that discharge were divided among those districts in proportion to the distribution of the general population.

In calculating excess costs or savings within a district, the patient origin adjusted age-specific cost per case for each district was first calculated. Those age-specific costs per case were then multiplied by the age-specific expected number of cases in that district. The expected number of cases were estimated by multiplying the state's age-specific rates by the corresponding age-specific populations in the district. The sum of those expected costs are then compared to the actual observed cost: when the observed cost is less than the expected it constitutes a savings; when the observed cost is greater, it constitutes an excess. Note that the age-specific costs per case are based upon the average costs for the residents of each district and may reflect stays in differing hospitals. Because hospitals have differing costs, one district may have higher rates but lower excess costs than another district.

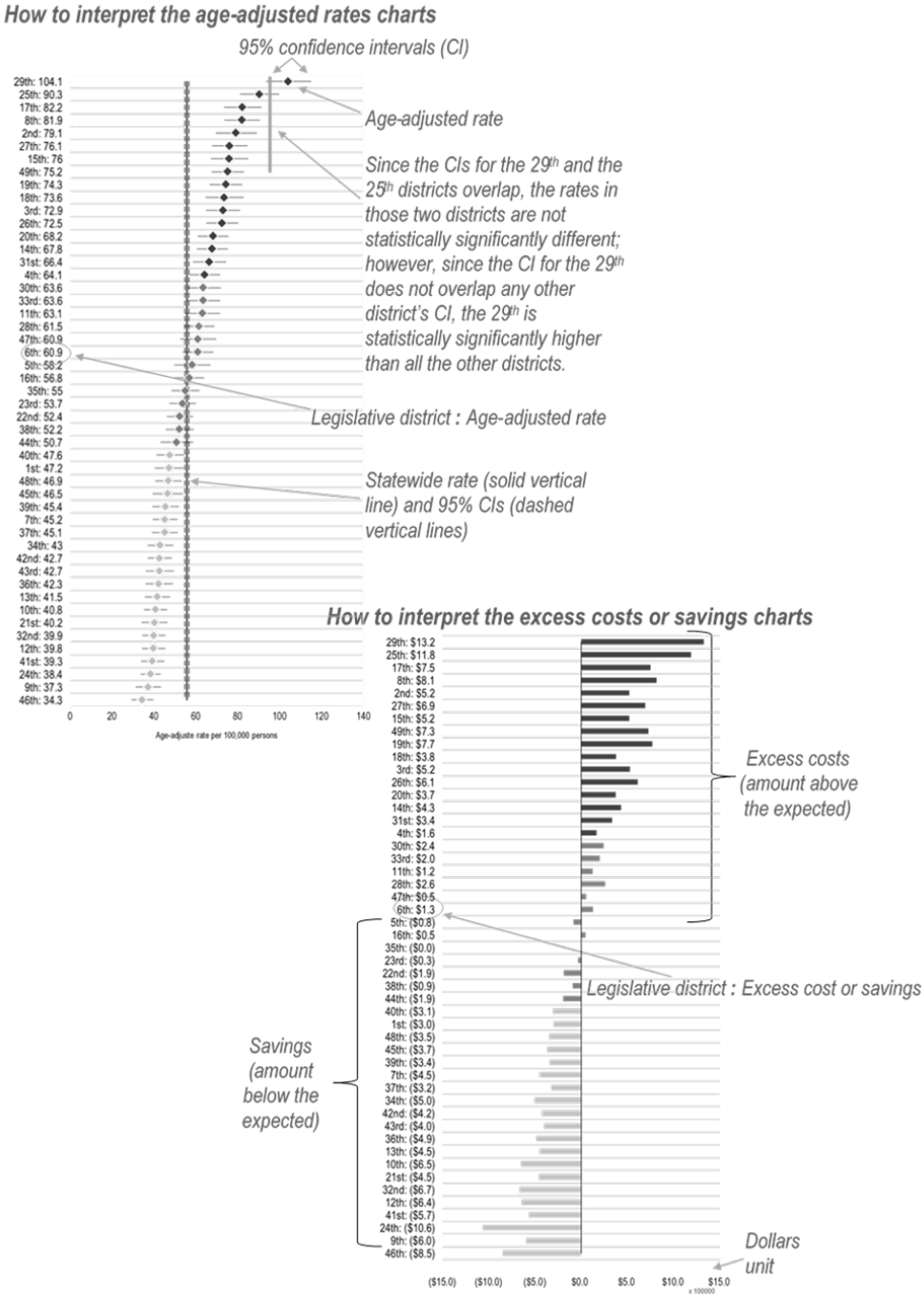
In short, rates are age-adjusted and are based upon the patients' district of residence (i.e., patient origin adjusted), not where they were hospitalized. Additionally, excess costs or savings are based upon the patient origin adjusted estimated age-specific costs, not the hospitals' reported charges.

[1] https://www.qualityindicators.ahrq.gov/Software/Default.aspx

[2] Four PQIs have case counts of less than 100 in some districts; for those PQIs the ratios of observed to expected cases (SMR) are used instead of age-adjusted rates. These ratios are based upon age-specific rates and include the 95 percent CIs.

Interpreting the Charts

Finally, a note on interpreting the charts: The 95 percent confidence intervals (CI) are shown in all of the charts pertaining to the legislative districts' rates. The state rate and state's 95 percent CI are shown as vertical lines, solid for the rate and dashed for the CIs. For both the charts and the maps, districts are deemed "high" or "low" if the CI for the district and the CI for the state do not overlap. Similarly, in comparing one district to another, the CIs on the charts can be used to determine if their rates significantly differ from one another: when the CI lines for the two districts **do not** overlap then they **are** statistically significantly different; if the CI lines **do** overlap then they **are not** significantly different.



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Prevention Quality Indicators

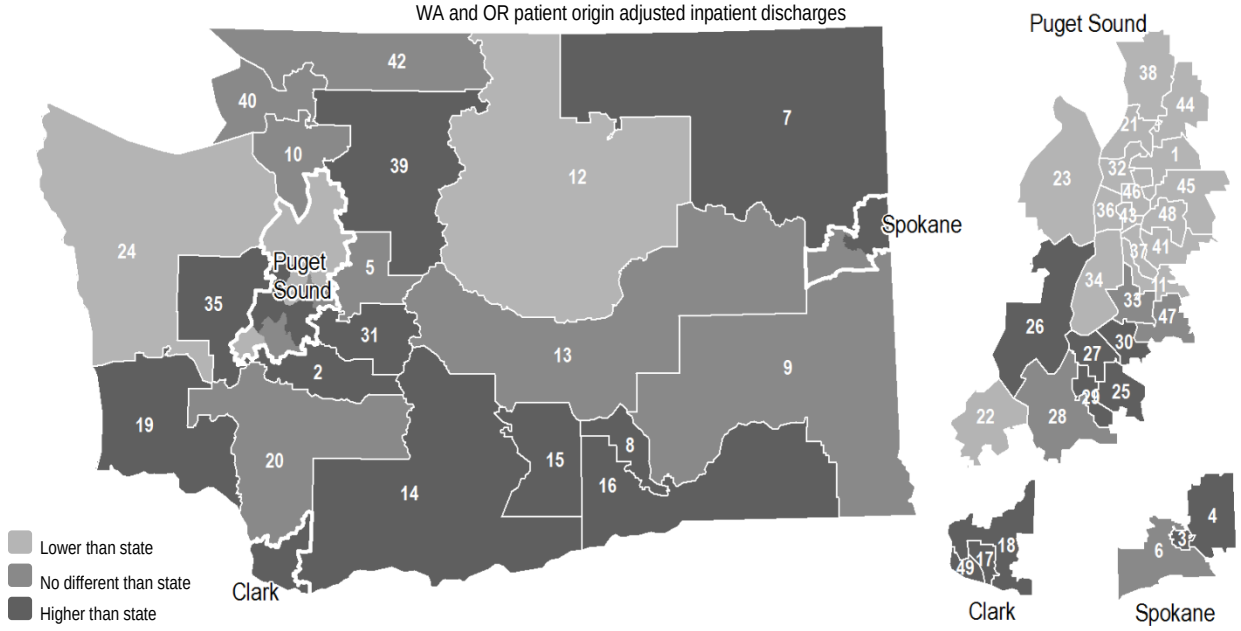
By

Legislative Districts

2013-15 combined Washington and Oregon Inpatient Hospital Discharges Of Washington State Residents

Acute Conditions Composite (PQI 91)

Figure 4
Acute Conditions Composite (PQI 91)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient origin adjusted inpatient discharges



The Acute Conditions Composite PQI measure combines inpatient discharges for dehydration, bacterial pneumonia and urinary tract infections for those ages 18 and older. From 2013-15 the number of discharges for these conditions averaged 18,260 per year with an annual estimated cost of $161 million. Because these estimates represent the cost to hospitals, what was billed or charged and what was actually reimbursed would likely be higher.

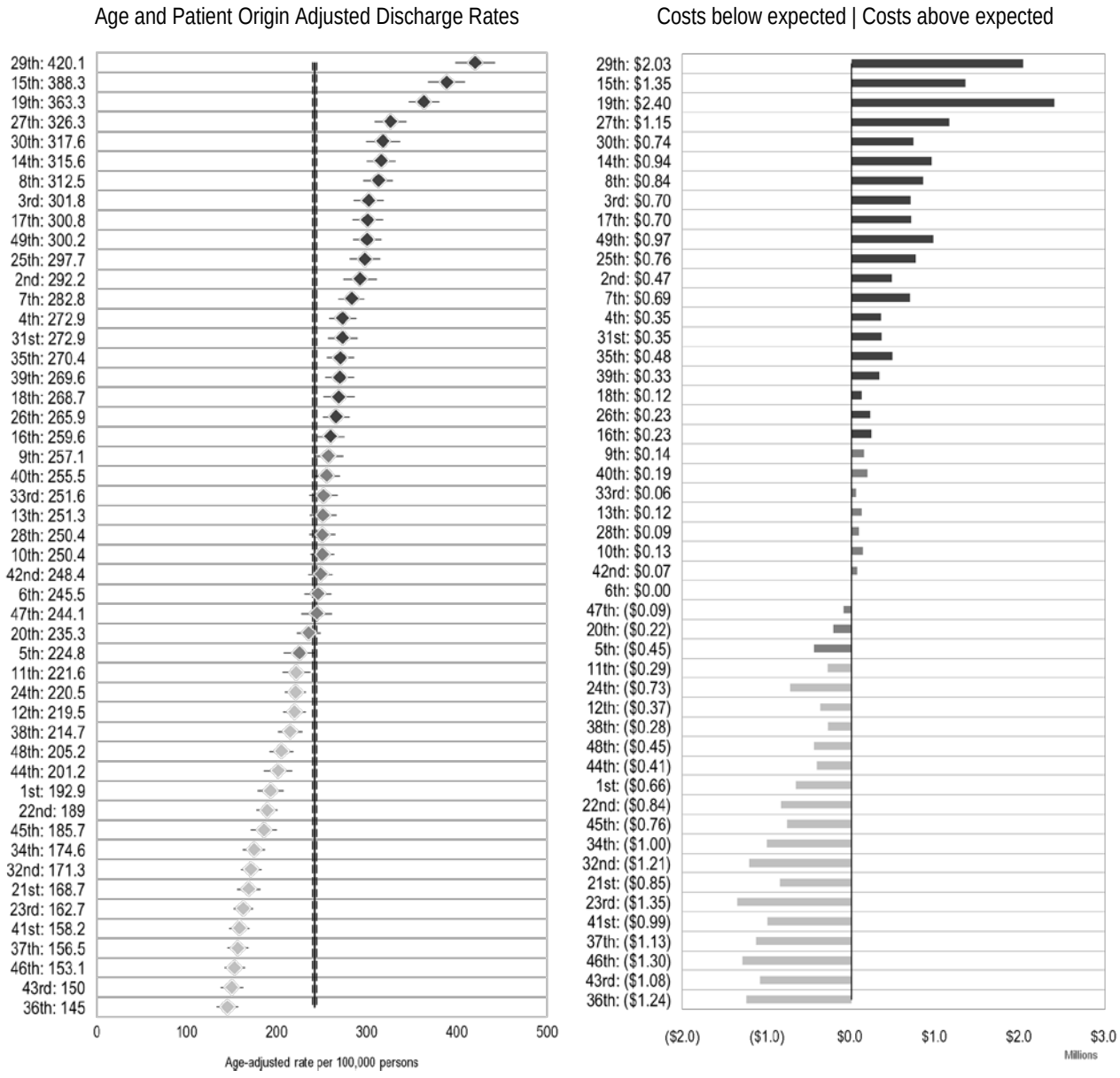
Similar to the All Conditions Composite PQI map (Figure 1), in the Acute Conditions Composite PQI map (Figure 4) the age-adjusted rates in the north Puget Sound districts are lower than the state's. So, too, most of the southwest and south central districts have rates higher than the state, as do the urban and northern Spokane City districts (3rd and 4th) and the Northwest's 39th. Perhaps the most noteworthy difference between the All Conditions Composite PQIs and Acute Conditions Composite PQIs is the shift seen in the 7th district where the rate for the Acute Conditions PQI is now significantly higher than the state's, whereas for the All Conditions Composite PQI it is significantly lower. Otherwise the rates in most of the northern and eastern sectors of the state are either lower than or not significantly different from the state rate.

Looking at the rank ordered list of districts in Figure 5, the rate in the 29th, 420 per 100,000 persons, stands out at nearly twice the state rate of 242 per 100,000. Together with the 15th, at 388 per 100,000, and the 19th, at 363, these three districts rates' are significantly higher than all the other districts'. The communities these districts represent vary. They include the near-urban south Puget Sound's 29th, the rural farming communities of central Washington's 15th and the timber, fishing and manufacturing communities of the coastal Southwest's 19th. Hospital costs in excess of what would be expected are $2.0 million per year in the 29th, $1.3 million per year in the 15th and $2.4 million per year the 19th.

Conversely, the 36th, 43rd and 46th districts had the lowest rates at 145, 150 and 153 per 100,000 persons. These districts are adjacent to one another and include northern, central and eastern Seattle neighborhoods such as Ballard, Queen Anne, Wallingford, Laurelhurst and north Lake Washington. The lower rates seen here equal savings beyond what would be expected of $1.2 million per year in the 36th, $1.1 million in the 43rd and $1.3 million in the 46th.

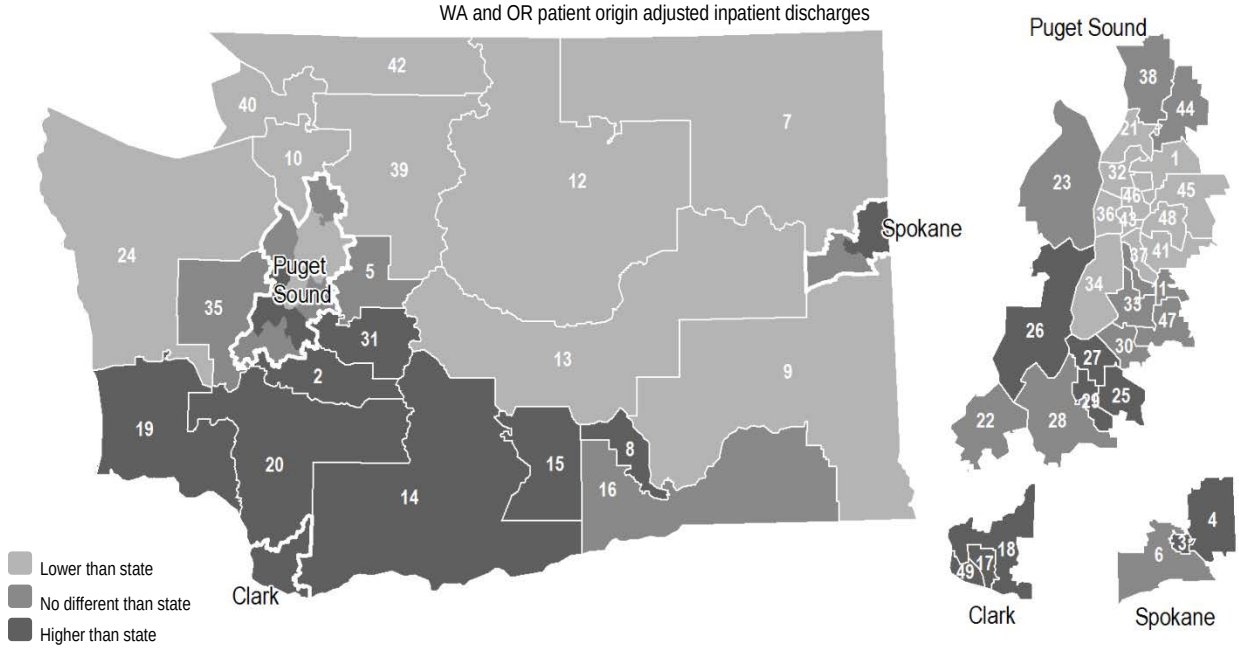
Figure 5

Acute Conditions composite (PQI 91)
Age-adjusted rates and excess costs or savings by legislative district
2013-15 combined



Dehydration (PQI 10)

Figure 6
Dehydration (PQI 10)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient origin adjusted inpatient discharges



Dehydration can be a serious acute condition especially among the frail, the elderly or others with underlying illnesses. Dehydration is preventable through adequate fluid intake and, if necessary, can be treated in an outpatient setting. At its more acute stages, inpatient admission may be necessary. Inpatient hospitalizations for dehydration are included in the Acute Conditions Composite PQI.

For 2013-15 the number of discharges for dehydration among those ages 18 and older averaged 4,230 per year with an annual estimated cost of $31 million.

As seen in Figure 6, hospitalizations for this condition show a distinct geographic pattern: Age-adjusted rates are highest throughout the southwest, south central and southern Puget Sound regions, as well as in Spokane City and its northern suburban environs; rates are lowest throughout most of the northern and eastern sectors of the state.

In Figure 7, the 29th stands out with the highest rate, 104 per 100,000 persons, almost twice the state rate of 56 per 100,000. Except for the 25th, which has the second highest rate (90 per 100,000), the rate in the 29th is significantly higher than all the other districts. The 17th has the third highest rate, 82. Adjacent to one another, the 29th and 25th districts include Lakewood, south Tacoma, Puyallup and Fife; the 17th includes the suburban Vancouver environs. The excess costs for these hospitalizations are $441, $395 and $250 thousand per year, respectively.

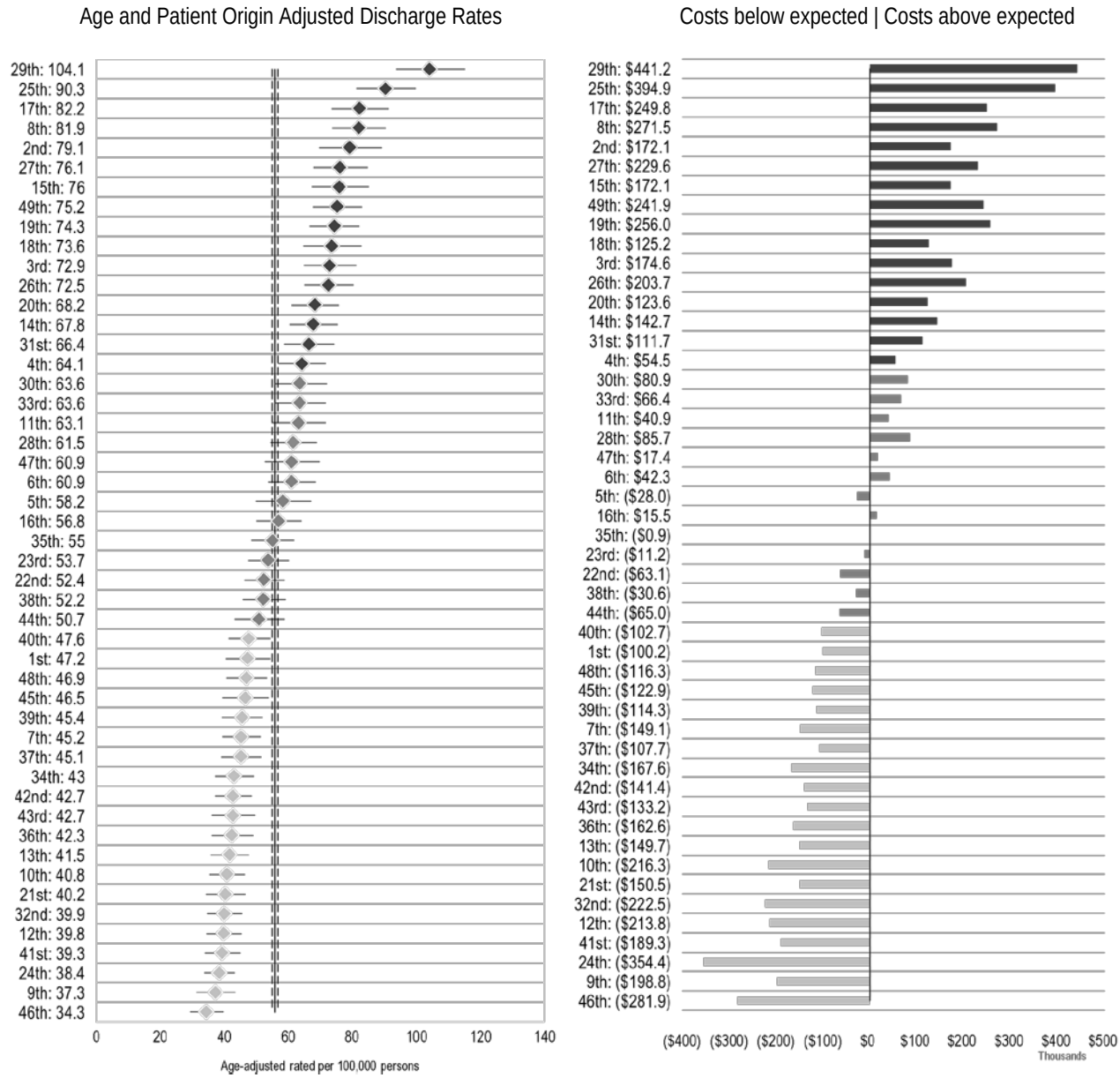
The lowest rates are seen in the 46th, at 34 per 100,000 persons, the 9th, at 37 per 100,000, and the 24th, at 38. These districts are spread throughout the state and include the north Puget Sound environs, the southeast corner of the state and the northwest Olympic Peninsula region. The savings incurred by these districts' low rates are estimated to be $282 thousand in the 46th, $199 thousand in the 9th and $354 thousand in the 24th.

Figure 7

Dehydration (PQI 10)

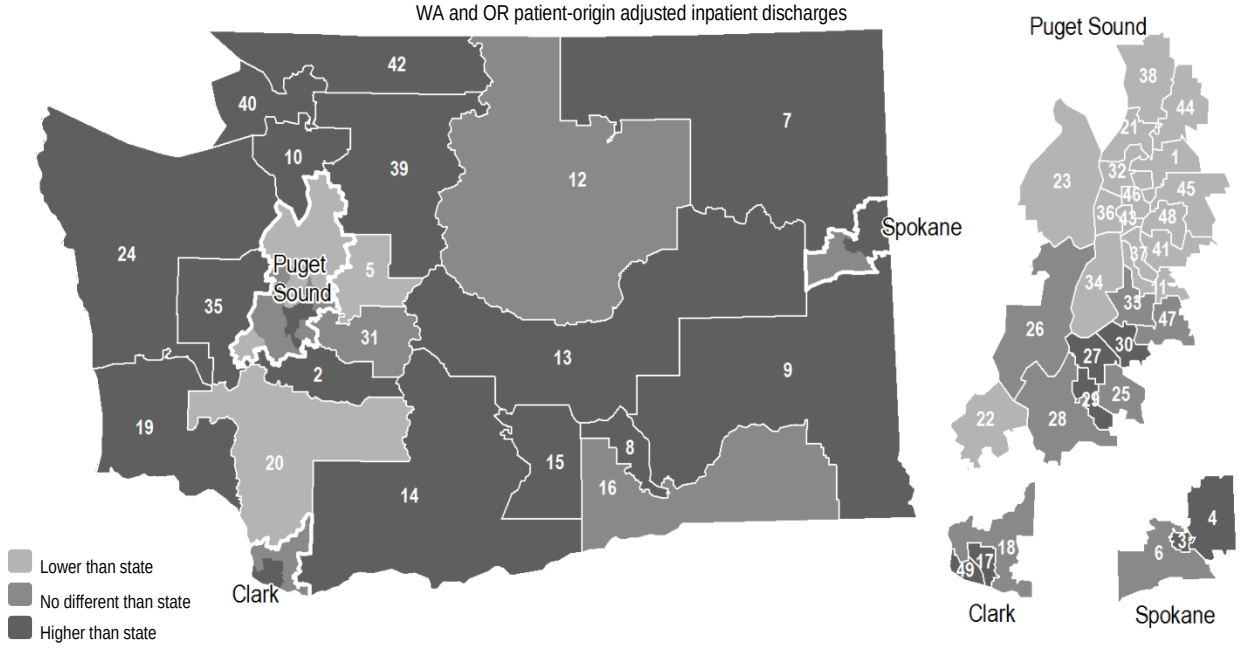
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Bacterial Pneumonia (PQI 11)

Figure 8
Bacterial Pneumonia (PQI 11)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Bacterial pneumonia is a relatively common acute condition, preventable through vaccinations and treatable for the most part with antibiotics. In addition to lack of access to or utilization of these preventative or primary care interventions, high rates of inpatient hospitalizations for this condition may at times be a function of unnecessary admissions.[3] Inpatient hospitalizations for bacterial pneumonia are included in the Acute Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for bacterial pneumonia among those ages 18 and older averaged 8,802 per year with an estimated cost of $89 million annually.

In Figure 8 it is clear that high age-adjusted rates for these hospitalizations are prevalent throughout the more rural districts of the state. Notable exceptions include the generally rural 20th (Centralia/Chehalis) and 5th (Issaquah/North Bend) districts, where the rates are lower than the state's, and the more urban districts around Vancouver, Tacoma and Spokane where the rates are higher than the state's.

In Figure 9, the 19th is seen as having the highest rate, 204 per 100,000 persons or almost twice the rate statewide of 115 per 100,000. Second highest is the 15th, at 192 per 100,000, and then the 29th, at 185. These districts are spread across the state and include rural coastal communities, rural eastern Washington farming communities and south Puget Sound near-urban communities. The annual costs in excess of what would be expected for these districts equal $2.0 million in the 19th, $779 thousand in the 15th and $938 thousand in the 29th.

Rates are lowest in the 36th, 43rd and 37th districts at 52, 59 and 60 per 100,000 persons respectively. These three districts are contiguous to one another and include Seattle and its outlying neighborhoods such as Ballard, Queen Anne, East Lake, Fremont, Renton and Madrona. The amount saved compared to what would be expected is $1.0 million per year in the 36th, $754 thousand in the 43rd and $909 thousand in the 37th.

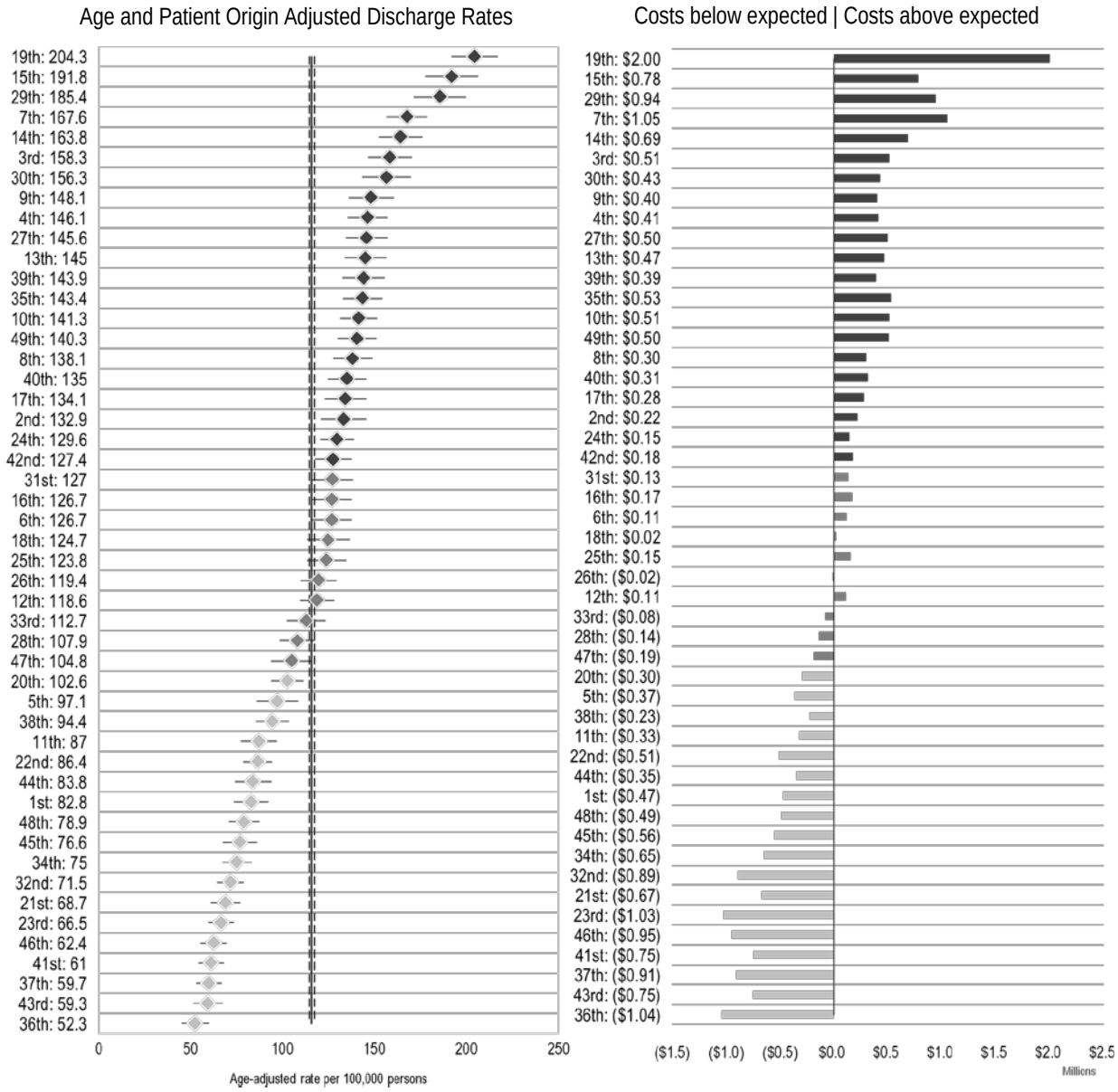
[3] Davies S, McDonald KM, Schmidt E, Schultz E, Geppert J, and Romano PS. (2011) "Expanding the uses of AHRQ's Prevention Quality Indicators: Validity from the clinician perspective." Medical Care 49(8) 679-685.

Figure 9

Bacterial Pneumonia (PQI 11)

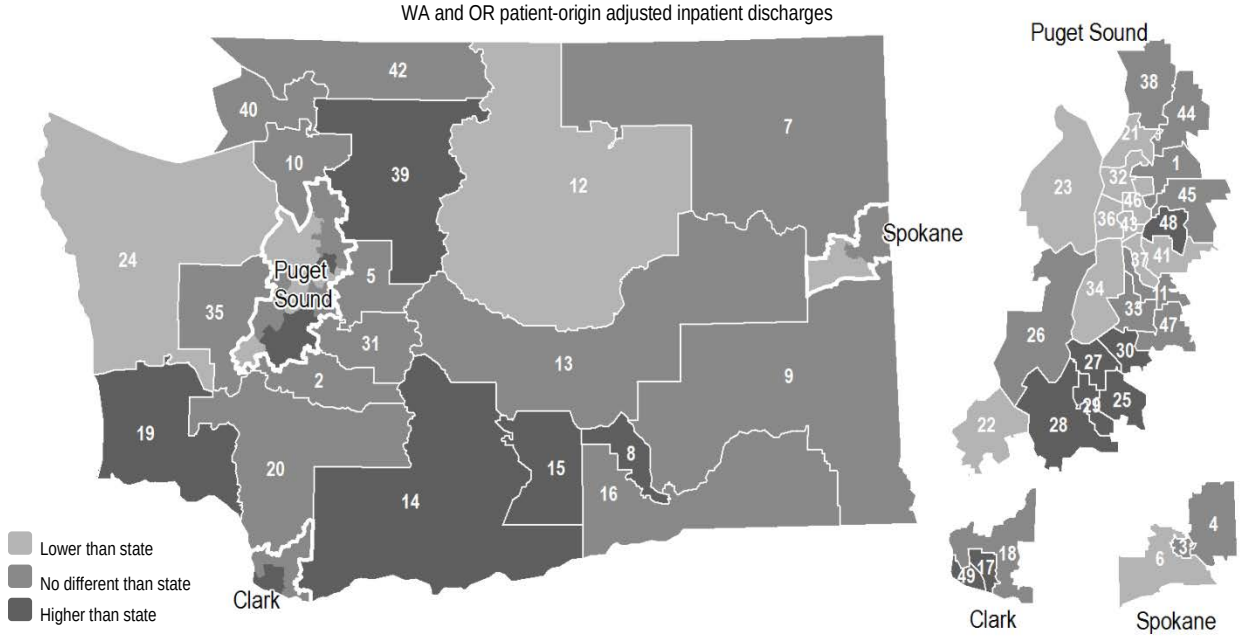
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Urinary Tract Infection (PQI 12)

Figure 10
Urinary Tract Infection (PQI 12)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Urinary tract infection (UTI) is a common acute condition that can generally be treated in an outpatient setting with antibiotics. However, if left untreated it can progress into more serious conditions, like kidney infections, which typically requiring an inpatient hospital stay. Inpatient hospitalizations for UTIs are included in the Acute Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for UTIs among those ages 18 and older averaged 5,229 per year with an estimated cost of $40 million annually.

As broadly seen in Figure 10, most of the high rate districts are found in the southwest, south central and south Puget Sound regions. A notable exception is the high UTI rate in the 48th, a district generally having rates lower than the state and including affluent communities such as Redmond and Medina. In fact, other than the 48th, most of the districts in the northern Puget Sound environs have UTI rates significantly below the state's.

In Figure 11, the 29th is shown to have the highest rate, 131 per 100,000 persons, nearly twice the state rate of 70 per 100,000. Other than the 15th, with the second highest rate at 121 per 100,000, the rate in the 29th is significantly higher than all the other districts. And, other than the 27th, with the third highest rate at 105, the rate is the 15th is significantly higher than the remaining districts. Two of these districts, the 29th and 27th are adjacent to one another and include Tacoma, South Tacoma and Lakewood. The 15th, located in south central Washington, includes Sunnyside, Selah and Union Gap. The annual excess costs due to the high rates in these districts is approximately $643 thousand in the 29th, $405 thousand in the 15th and $393 thousand in the 27th.

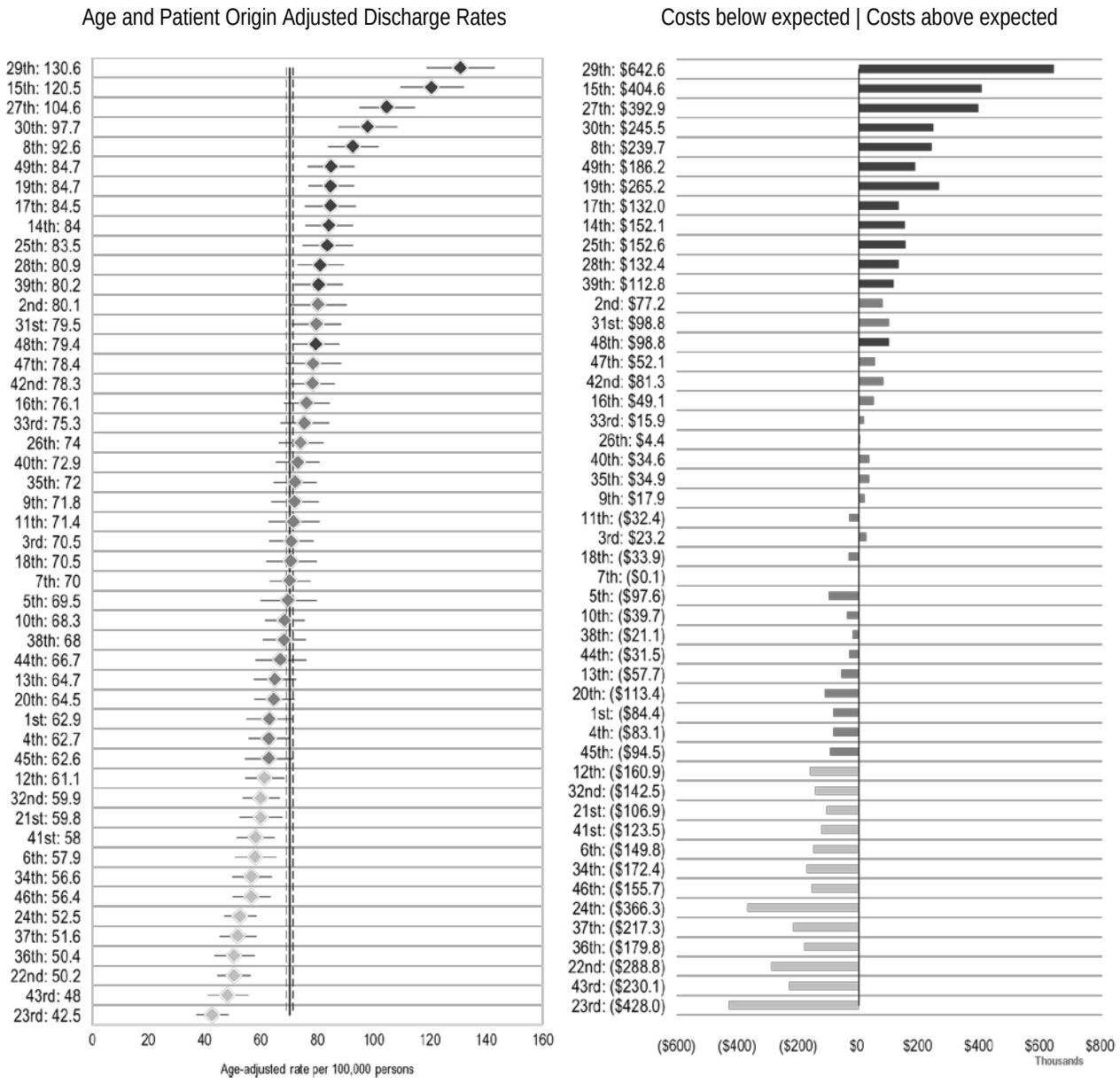
The lowest rates are seen in the 23rd, 43rd and 22nd. While all are within the Puget Sound region, they are somewhat spread apart and include Silverdale, Olympia and central Seattle. Savings incurred because of the low rates in these districts equal $428 thousand in the 23rd, $230 thousand in the 43rd and $289 thousand in the 22nd.

Figure 11

Urinary Tract Infection (PQI 12)

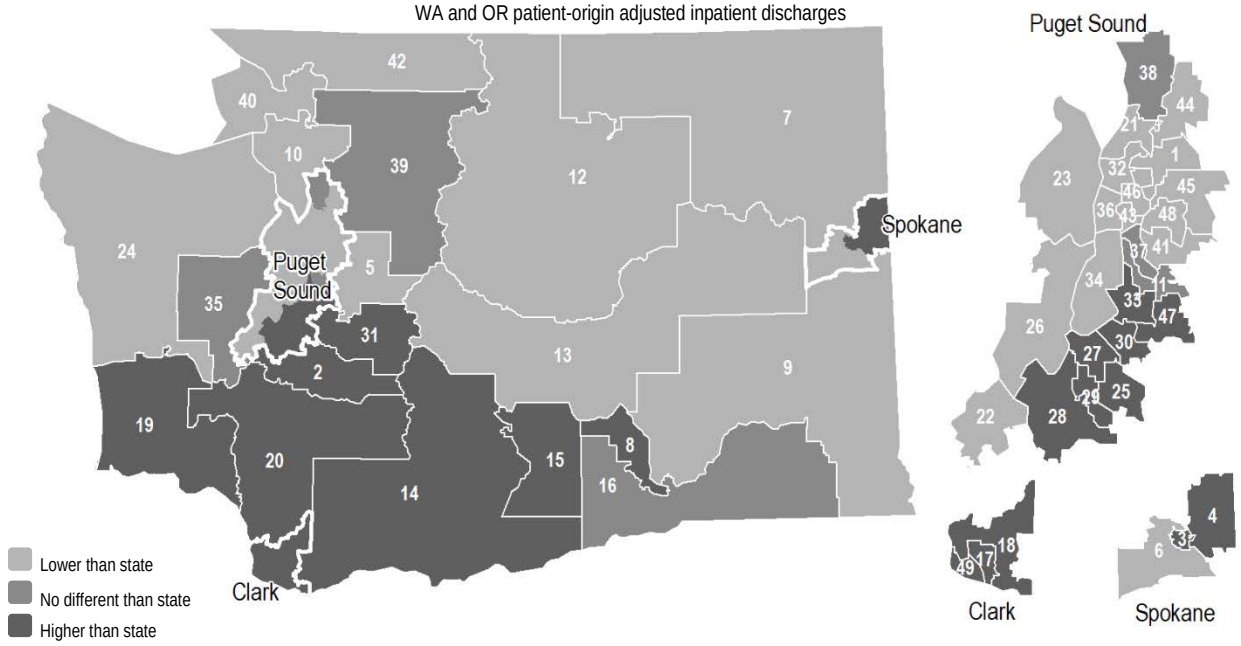
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Chronic Conditions Composite (PQI 92)

Figure 12
Chronic Conditions Composite (PQI 92)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



The Chronic Conditions Composite PQI combines inpatient discharges for four diabetes-related conditions—short-term and long-term complications from diabetes, uncontrolled diabetes, and lower-extremity amputations among patients with diabetes—and four additional conditions including chronic obstructive pulmonary disease (COPD) or asthma in older adults, hypertension, heart failure, and asthma in younger adults. COPD or asthma in older adults includes patients ages 40 and older, and asthma in younger adults includes patients ages 18 to 39; the remaining measures pertain to adults ages 18 and older. The diabetes-related PQIs are also combined into a composite Diabetes PQI.

For 2013-15 the number of inpatients discharges for these chronic conditions averaged 30,706 per year with an estimated cost of $327 million annually.

As seen in Figure 12, with the exception of the districts in the Spokane City environs, all of the remaining districts with age-adjusted rates that are significantly higher than the state's rate are located in the southwest, south central and south Puget Sound sectors of the state. And, with the exception of four districts—the 16th, 35th, 38th and 39th—all of the remaining districts in the north and eastern sectors have rates that are significantly lower than the state's.

Looking at the rank ordered rates in Figure 13, the 29th stands out as being significantly higher than all the other districts and, with a rate of 879 per 100,000 persons, is more than twice the state rate of 403 per 100,000. The second highest district, the 27th, with a rate of 714, is also significantly higher than all the remaining districts. Third highest is the 49th with a rate of 639. Adjacent to one another, the 29th and 27th include Tacoma, South Tacoma and Lakewood; the 49th includes Vancouver. Because of the high rates in these districts the cost in excess of what would be expected equals $6.8 million more per year in the 29th, $5.1 million more per year in the 27th and $4.5 million more per year in the 49th.

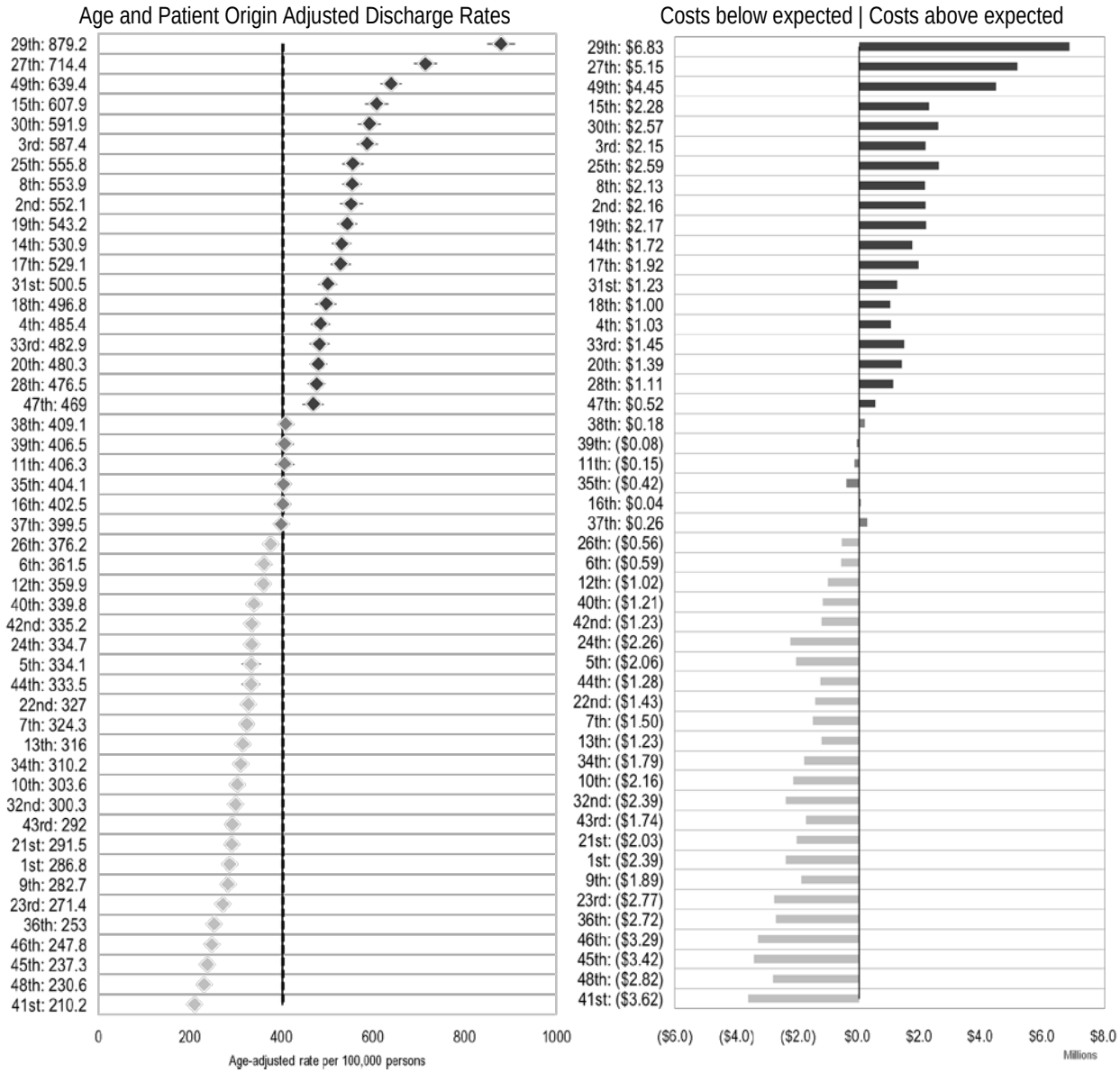
In contrast, the lowest rate is in the 41st district; at 210 per 100,000, it is only slightly more than half the statewide rate. Second lowest is the 48th at 231 per 100,000, and third is the 45th at 237. These three districts are adjacent to each other and include Bellevue, Redmond and Kirkland. The savings incurred because of their low rates are $3.6 million per year in the 41st, $2.8 million in the 48th and $3.4 million in the 45th.

Figure 13

Chronic Conditions Composite (PQI 92)

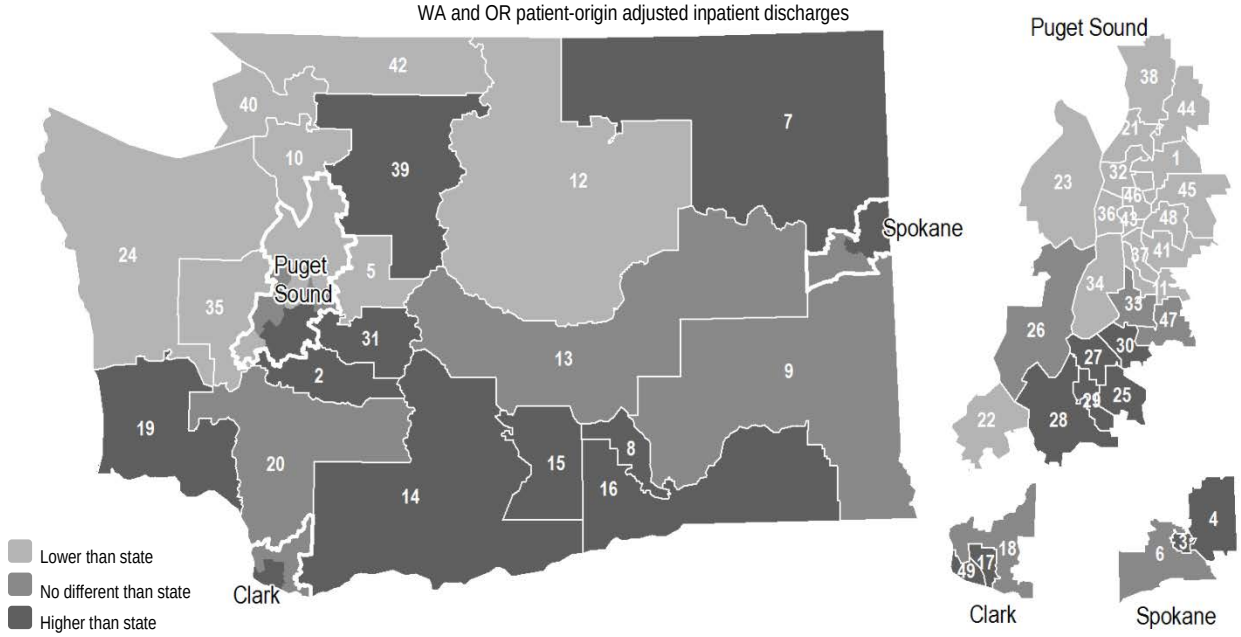
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults (PQI 05)

Figure 14
COPD or Asthma in Older Adults (PQI 5)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Chronic Obstructive Pulmonary Disease (COPD) is an umbrella term used for a number of progressive lung diseases including emphysema and chronic bronchitis. While generally treated in an outpatient setting, without access to appropriate primary care or through lack of adherence to prescribed therapies, these conditions, together with asthma, may worsen to the point of requiring an inpatient hospital stay. Inpatient stays for COPD and asthma are included in the Chronic Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for COPD or asthma among those ages 40 and older averaged 7,645 per year at an annual cost of $71 million.

As seen in Figure 14, all but two of the districts in the southwest and south central sectors of the state have rates higher than the state's, as do those districts in the south Puget Sound region, the northeast corner and the north central's 39th. In contrast, and except for the 39th, rates in those districts in the north, northwest and north central regions are lower than the state's.

In Figure 15, the 29th stands out with the highest rate, 236 per 100,000 persons, or 2.5 times the state rate of 98 per 100,000. Except for the 27th, which has the second highest rates at 211 per 100,000, the rate in the 29th is significantly higher than all the other districts' rates; the rate in the 27th is significantly higher than all the remaining districts. Third highest is the 3rd, at 182 per 100,000. The 29th and the 27th, which are adjacent to one another, include Lakewood and south and central Tacoma; the 3rd is central Spokane City. Annual costs in excess of what would be expected in these districts are $1.8 million in the 29th, $1.8 million in the 27th, and $910 thousand in the 3rd.

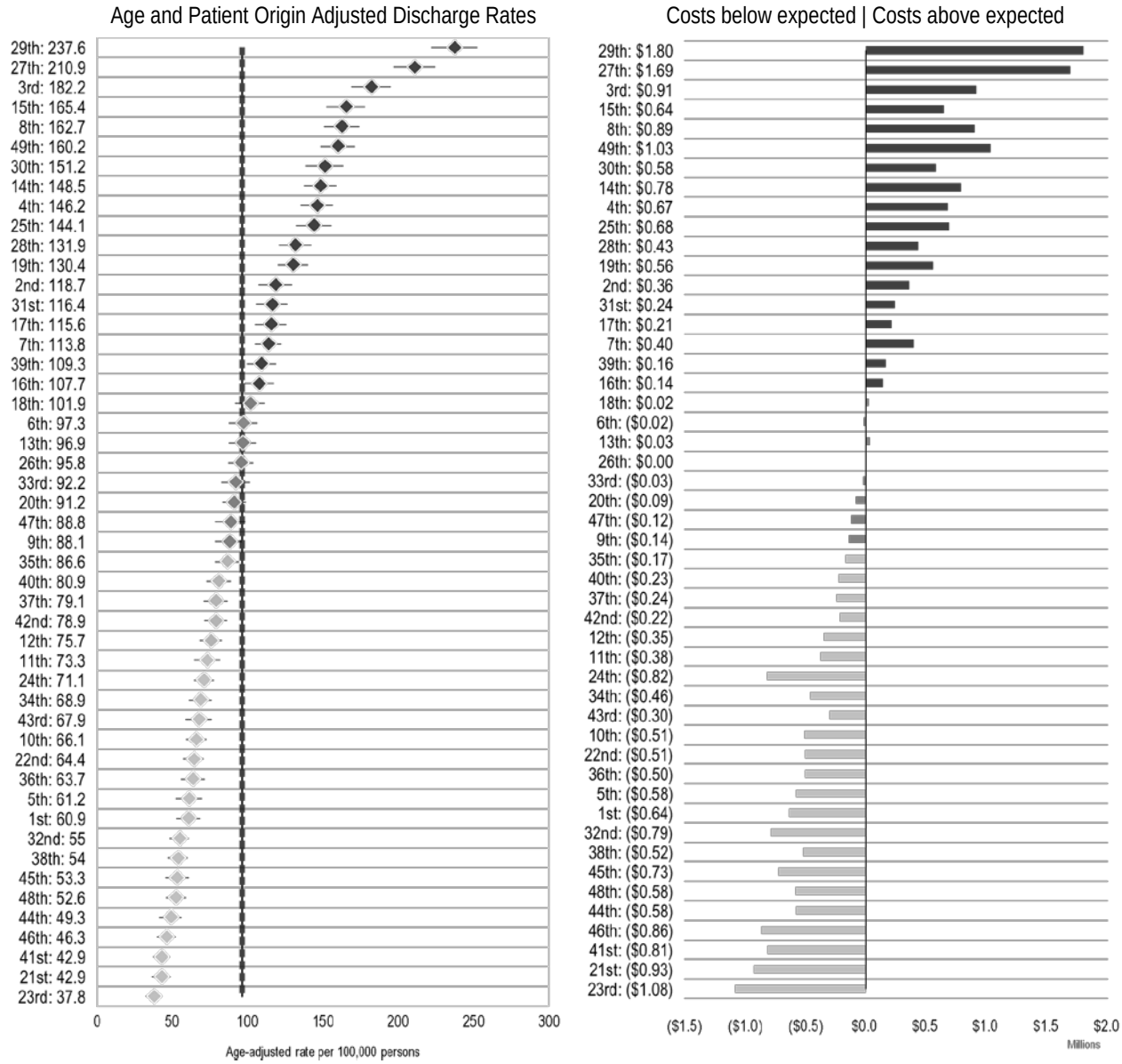
The lowest rate is in the 23rd and, at 38 per 100,000 persons, it is less than 40 percent of the state rate. Second and third lowest are the 21st and 41st districts, each with a rate of 43 per 100,000—less than half the state rate. Although not directly adjacent to one another, the 23rd, which includes Bainbridge Island and Kingston, and the 21st, which includes Edmonds and Mukilteo, are linked by ferry. The 41st includes Bellevue and Mercer Island. Savings, as compared to what would be expected, equal $1.1 million per year in the 23rd, $926 thousand in the 21st and $814 thousand per year in the 41st.

Figure 15

COPD or Asthma in Older Adults (PQI 5)

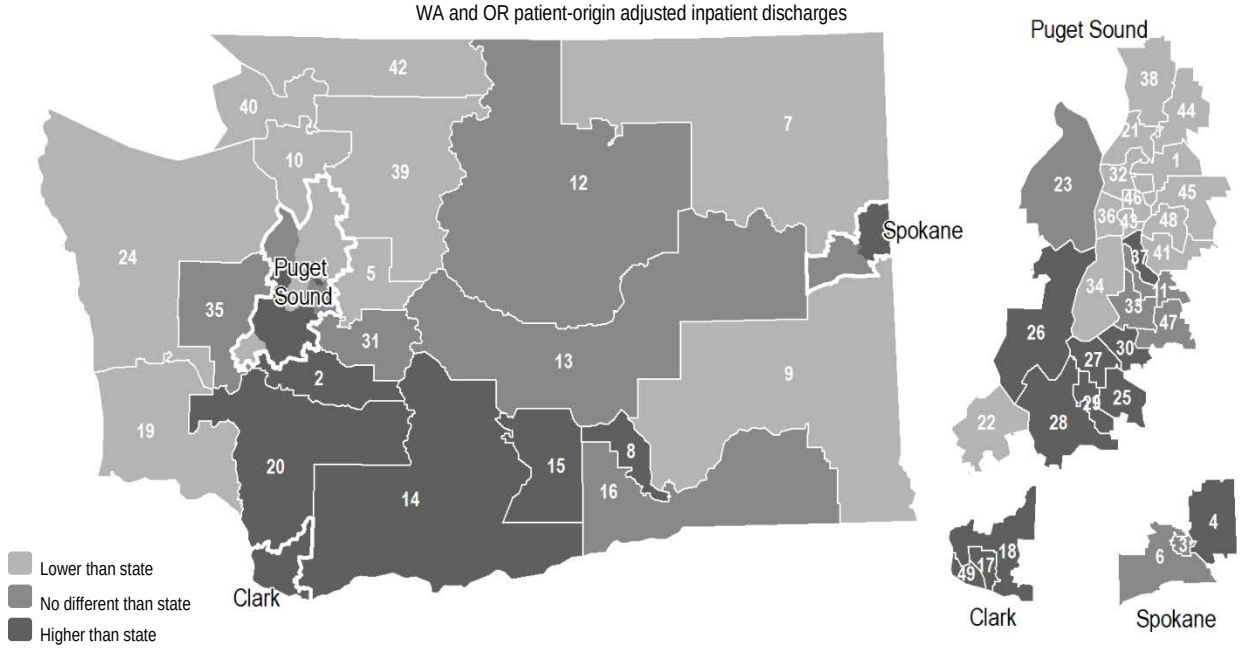
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Hypertension (PQI 07)

Figure 16
Hypertension (PQI 7)
SMRs by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Hypertension is a common condition that can be readily diagnosed during a routine examination and easily managed through prescription medications. The condition is, however, generally asymptomatic and individuals without a primary care provider, or those who do not adhere to their prescribed therapies, are at higher risk for hospitalization. Inpatient stays for hypertension are included in the Chronic Conditions Composite PQI.

From 2013-15 the number of inpatient discharges for hypertension among those ages 18 and older averaged 1,368 per year at an annual cost of $11 million. Because the number of stays is relatively low, equaling less than 100 cases for the three years combined in many districts, rather than computing age-adjusted rates, the ratio of observed to expected number of cases, also known as the SMR, was calculated. These SMRs are commonly used in instances of low case counts and do account for the differences in age distribution among the districts.

As seen in Figure 16, areas where the SMR was higher than the state's generally cluster in the south Puget Sound and south central regions of the state, although the north Spokane City's 4th district also has a high SMR. Districts along the coast, those in the northwest, north Puget Sound and in the northeast and southeast corners of the state have low SMRs.

As seen in Figure 17, the 29th is an extreme outlier with an SMR that is four times greater than the expected. The 27th and the 25th, with SMRs that are twice the expected, rank second and third highest. These three districts border one another and include Lakewood, all of Tacoma, Puyallup and Fife. Annual cost in excess of what would be expected equals $517 thousand in the 29th, $222 thousand in the 27th and $254 thousand in the 25th.

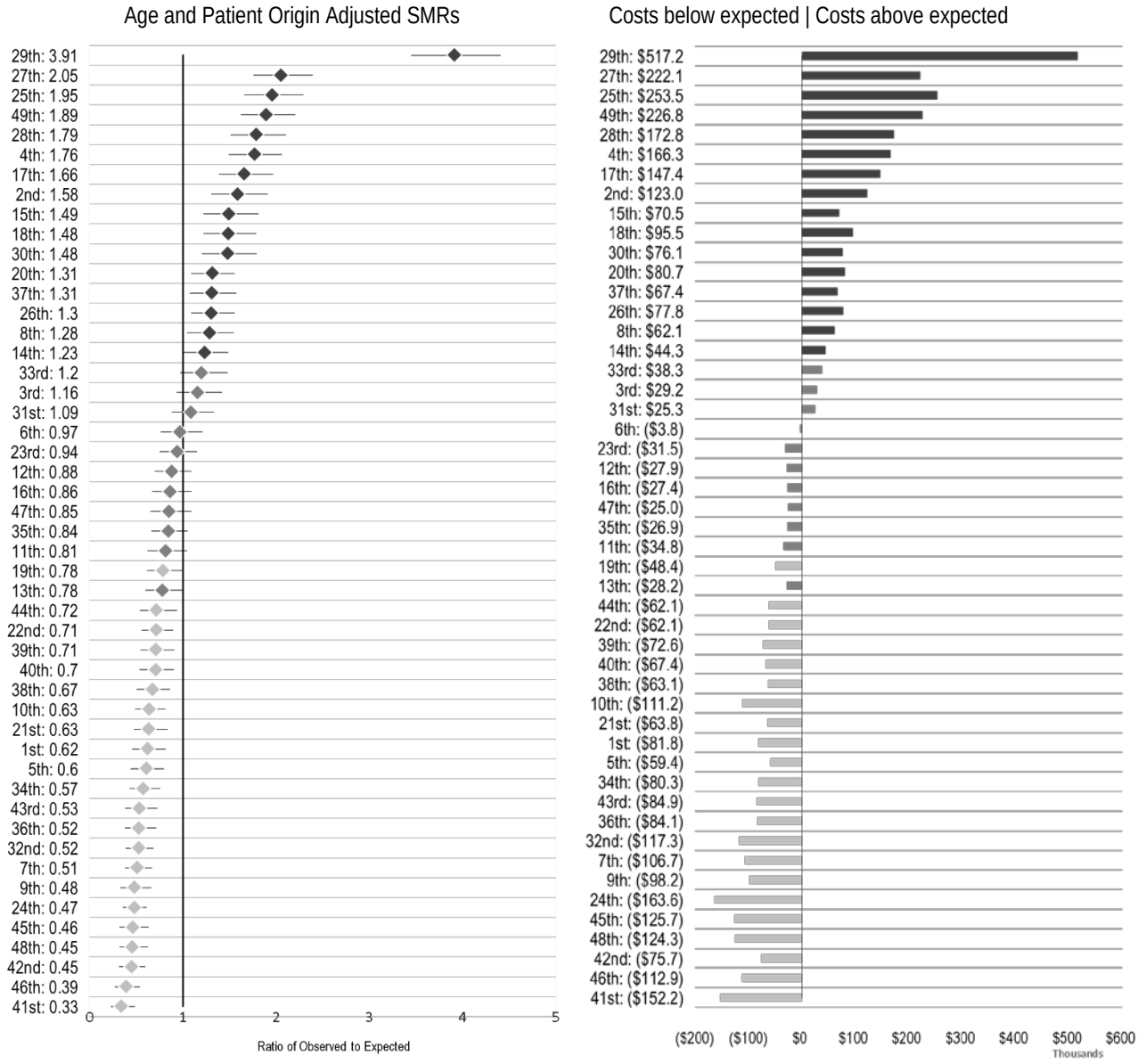
The lowest SMR is in the 41st, at one-third of the expected. Second lowest is the 46th, equaling 40 percent of the expected. Third lowest is the 42nd, at 45 percent of the expected. Both the 41st and the 46th are in the north Puget Sound region and include Bellevue and Laurelhurst; the 42nd is in the north-northwest sector and includes northern Bellingham and Blaine. Savings, in comparison to what would be expected, equal $152 thousand per year in the 41st, $113 thousand in the 46th and $76 thousand in the 42nd.

Figure 17

Hypertension (PQI 7)

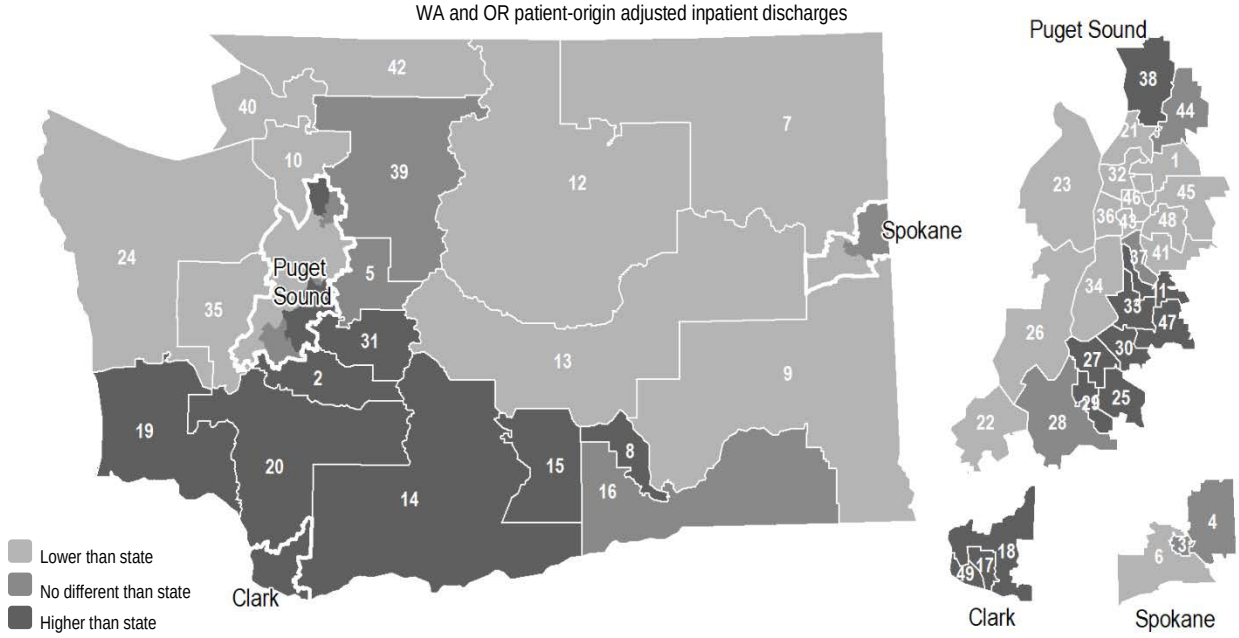
Observed to expected ratios (SMR) and excess costs or savings by legislative district

2013-15 combined



Heart Failure (PQI 8)

Figure 18
Heart Failure (PQI 8)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Heart failure, which includes left- and right-sided heart failure as well as congestive heart failure, is a chronic condition typically brought on by having had a previous heart condition such as coronary artery disease, high blood pressure or a previous heart attack. The disease can be managed through adherence to prescribed medications, appropriate life-style changes and routine primary care provider visits. Left untreated it will require inpatient hospitalization and/or lead to death. Heart failure is included in the Chronic Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for heart failure among those ages 18 and older averaged 13,858 per year at an annual cost of $152 million.

As seen in Figure 18, rates are highest in the southwest, south central and south Puget Sound regions of the state. Rates are also high in the Everett environs included in the 38th district. Rates are low throughout most of the rest of the state with a few exceptions where the rates do not differ significantly from the state rate.

In Figure 19, the 29th is shown to be an outlier with a rate of 354 per 100,000 persons, making it significantly higher than all other districts and nearly twice the state rate of 181 per 100,000. Second highest is the 27th with rate of 291 per 100,000, and third is the 30th with a rate of 276. These three district align geographically and include Lakewood, Tacoma and Federal Way. Costs above what would be expected for the districts are approximately $2.6 million per year in the 29th, $1.9 million in the 27th and $1.3 million in the 30th.

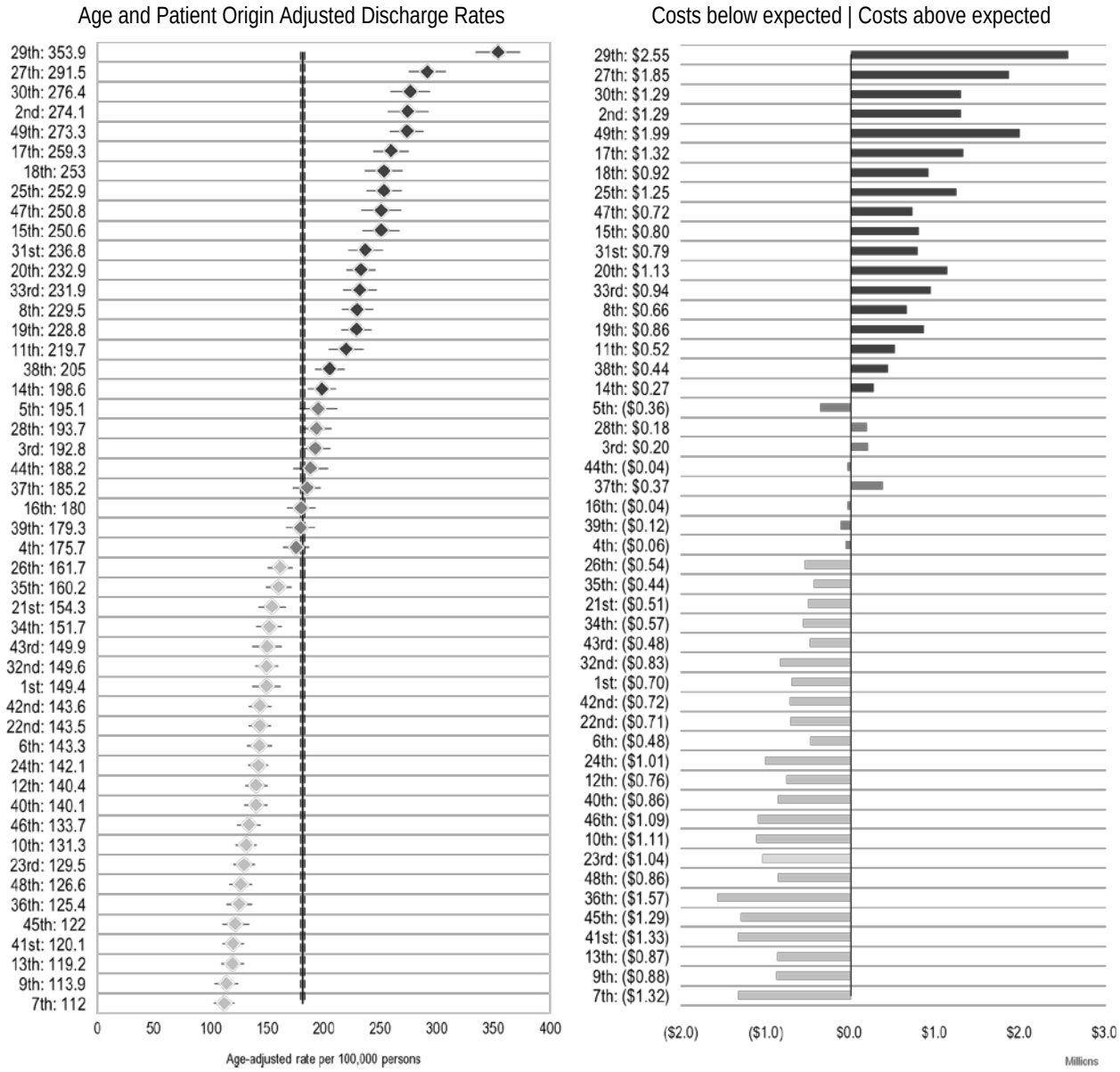
The lowest rate is in the 7th at 112 per 100,000 persons or about 60 percent of the state rate. Next lowest is the 9th at 114 per 100,000, followed by the 13th at 119. These districts also align and include Colville, Chewelah, Othello, Pullman, Ellensburg and Moses Lake. Saving, as compared to the expected, equal $1.3 million per year in the 7th and $878 thousand per year in the 9th and $868 thousand in the 13th.

Figure 19

Heart Failure (PQI 8)

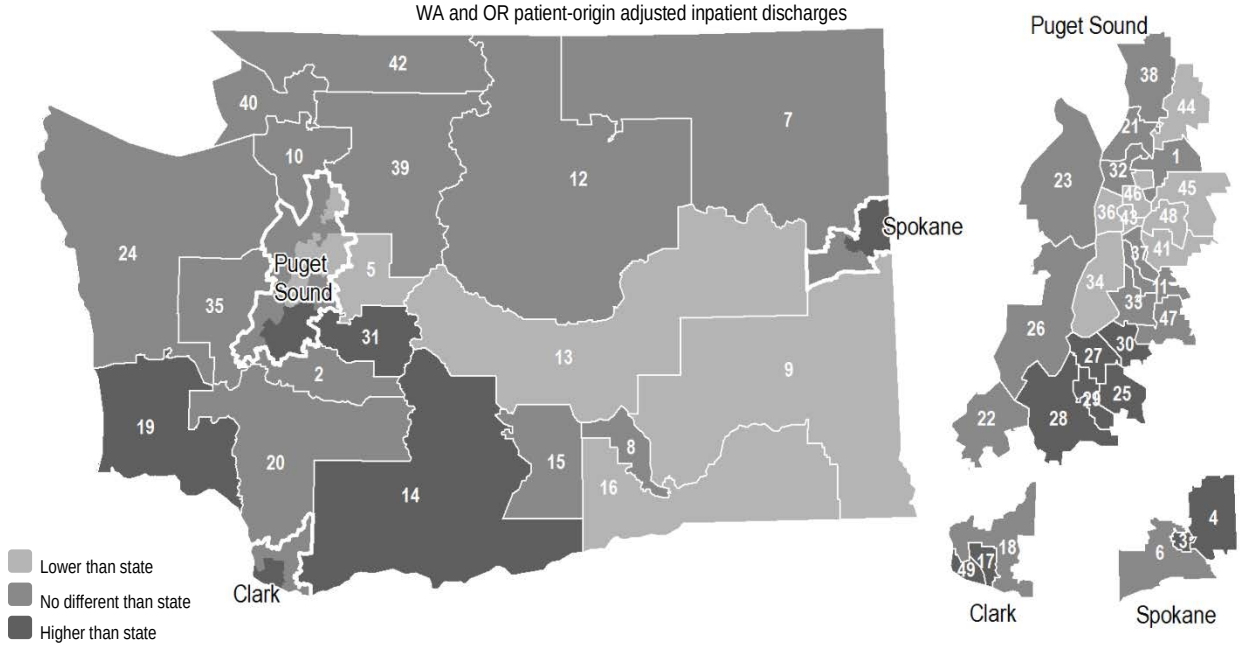
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Asthma in Younger Adults (PQI 15)

Figure 20
Asthma in Younger Adults (PQI 15)
SMRs by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Asthma is a relatively common condition that can be managed in an outpatient setting provided the patient has access to appropriate primary care services and is able to comply with prescribed therapies. Left unmanaged, asthma can require an inpatient hospitalization. This indicator focuses on adults' ages 18 to 39, and is included in the Chronic Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for asthma among those ages 18 to 39 averaged 507 per year at an annual cost of $4 million. Because of the low number of stays, equaling less than 100 cases for the three years combined in many districts, rather than computing age-adjusted rates, the ratio of observed to expected number of cases, also known as the SMR, was calculated. These SMRs are commonly used in instances of low case counts and do account for the differences in age distribution among the districts.

As seen in Figure 20, most of the districts have an SMR that does not differ significantly for the expected. However, pockets where the SMR is high include the greater Tacoma environs, the south coast region, and Vancouver and Spokane cities. Areas with low SMRs include the southeast and central Washington regions and the north central Puget Sound area.

In Figure 21, the 29th stands out with the highest SMR, slightly more than 2.5 times the expected. The 14th and the 30th each have an SMR approximately twice the expected. The 29th and 30th are located in the south Puget Sound region and include South Tacoma, Lakewood, Federal Way and Milton. The 14th is in south central Washington and includes Yakima and Goldendale. Annual costs in excess of what would be expected are about $109 thousand in the 29th, $65 thousand in the 14th and $67 thousand in the 30th.

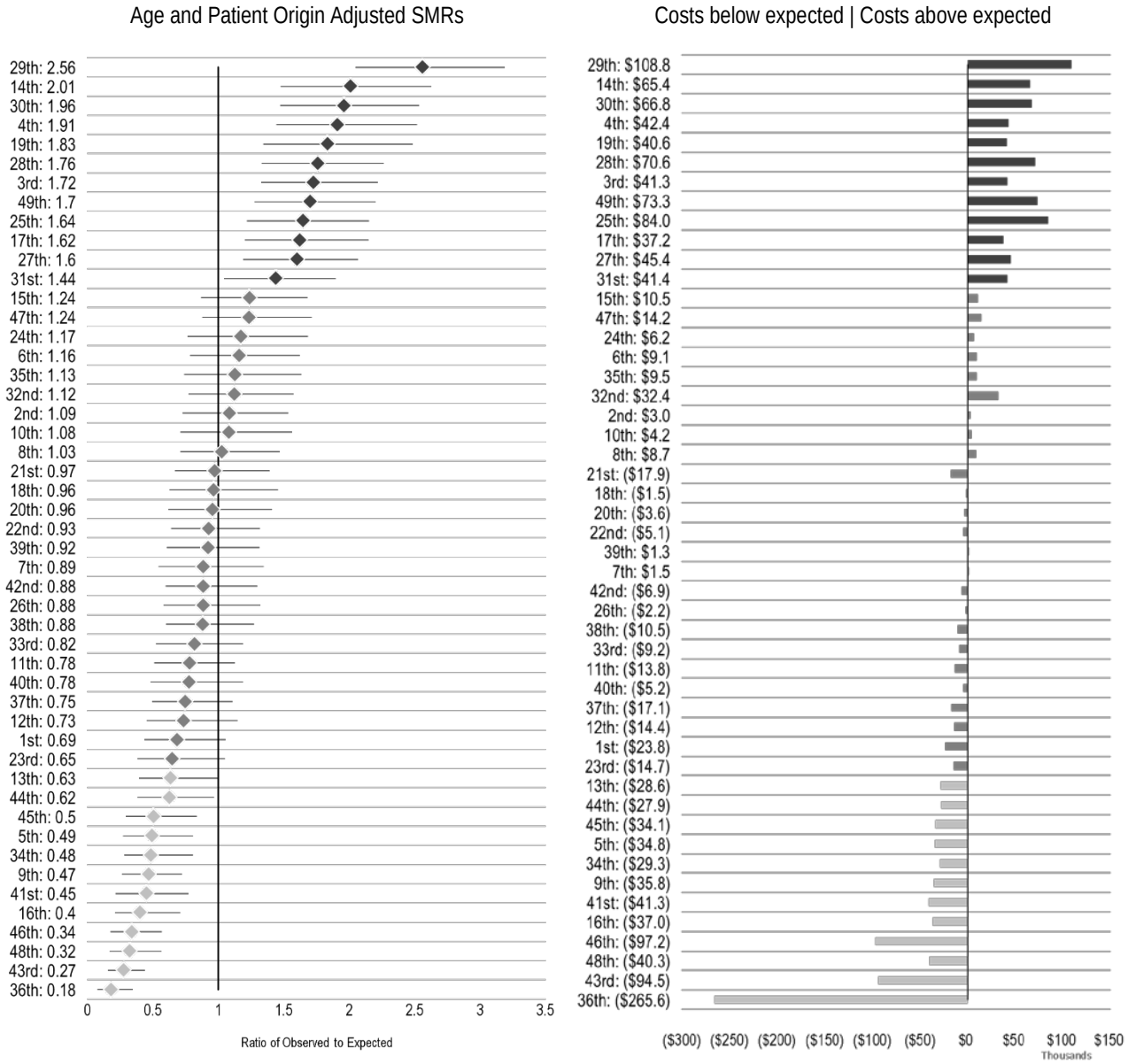
Districts with the lowest SMRs include the 36th with an SMR that is less than 20 percent of the expected, the 43rd at 27 percent of the expected and the 48th at about one-third of the expected. The three districts are contiguous and include Ballard, East Lake and Redmond. Savings, compared to what would be expected, equal $266 thousand in the 36th, $94 thousand in the 43rd and $40 thousand in the 48th.

Figure 21

Asthma in Younger Adults (PQI 15)

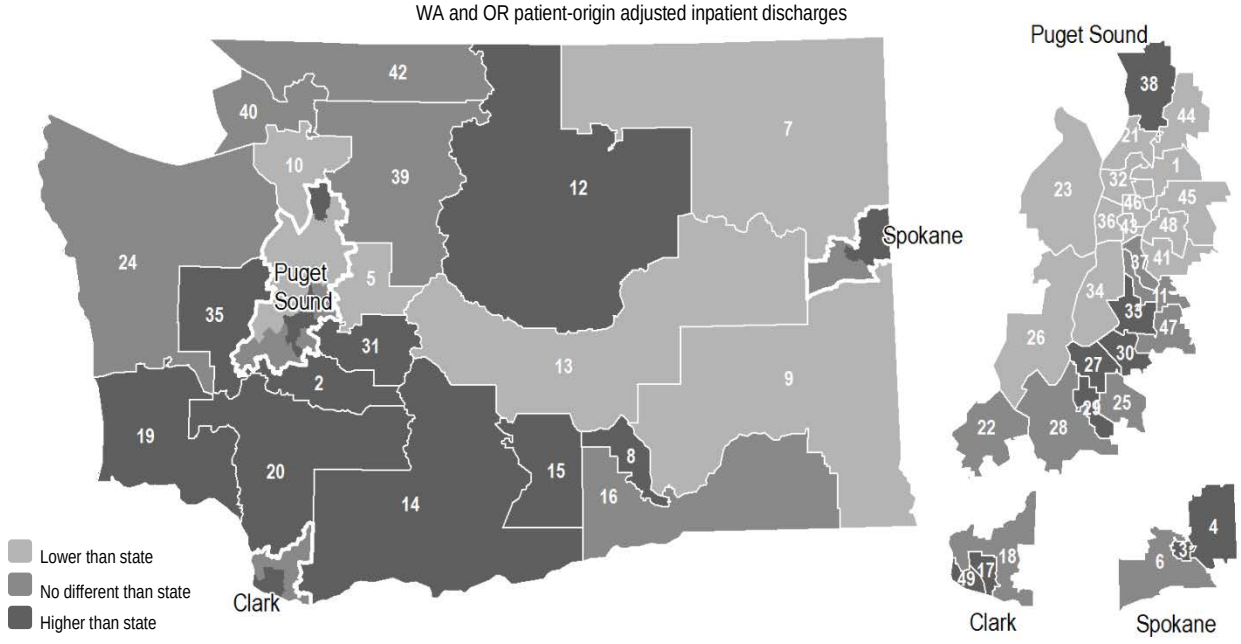
Observed to expected ratios (SMR) and excess costs or savings by legislative district

2013-15 combined



Diabetes Composite (PQI 93)

Figure 22
Diabetes Composite (PQI 93)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



The Diabetes Composite PQI measure combines inpatient discharges for four diabetes-related conditions: short-term and long-term complications from diabetes, uncontrolled diabetes, and lower-extremity amputations among patients with diabetes. Inpatient hospitalizations for these conditions are potentially preventable through access to appropriate primary care services and adherence to prescribed therapies. These diabetes-related hospitalizations are also included in the Chronic Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for these diabetes-related PQIs among those ages 18 and older averaged 7,327 per year at an annual cost of $87 million.

As seen in Figure 22, the districts with high rates for these hospitalizations broadly cluster in the southwest and south central regions of the state, although they are also high among the Puget Sound districts between SeaTac and Lakewood, and in those including Shelton, Everett, Wenatchee and Spokane cities. Low rate districts are seen in the north Puget Sound region, including Whidbey Island, and throughout most of the central and eastern sectors of the state.

In Figure 23, the 29th is seen to have the highest rate, 197 per 100,000 persons, twice the state rate of 99 per 100,000. Except for the 3rd, which has the second highest rate, 176 per 100,000, the rate in the 29th is significantly higher than all the other districts. The district with the third highest is the 27th at 163 per 100,000. The 29th and 27th are adjacent to one another and include Lakewood and Tacoma. The 3rd includes Spokane City. The annual excess costs due to these high hospitalization rates are $1.7 million in the 29th, $877 thousand in the 3rd and $1.2 million in the 27th.

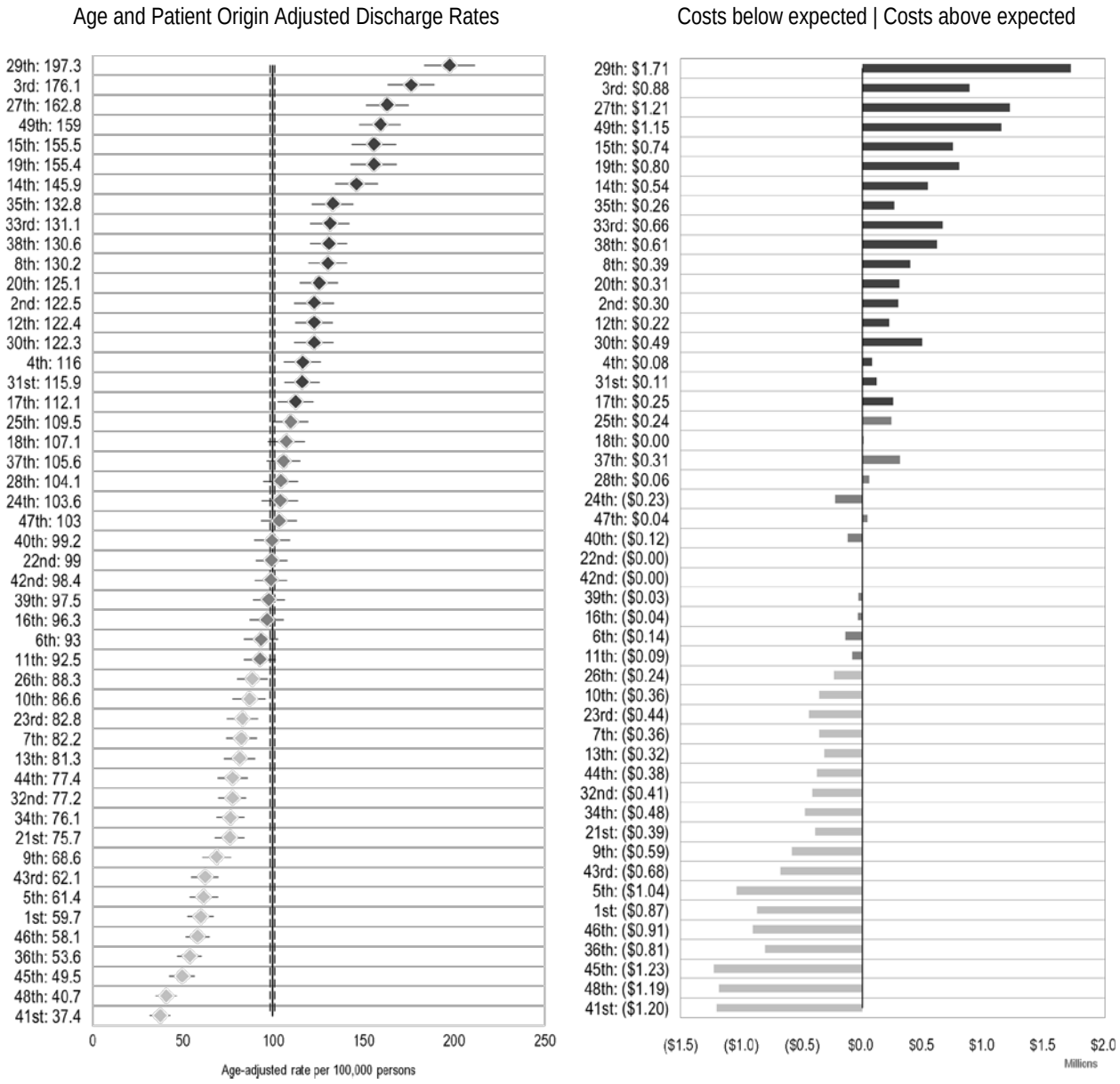
The lowest rate is seen in the 41st, 37 per 100,000 persons, about 38 percent of the state rate. Second lowest is the 48th, 40 per 100,000, and third is the 45th at 50 per 100,000. These three districts are adjacent to each other and include Bellevue, Redmond and Kirkland. The savings incurred due to these low rates equal about $1.2 million in each district.

Figure 23

Diabetes Composite (PQI 93)

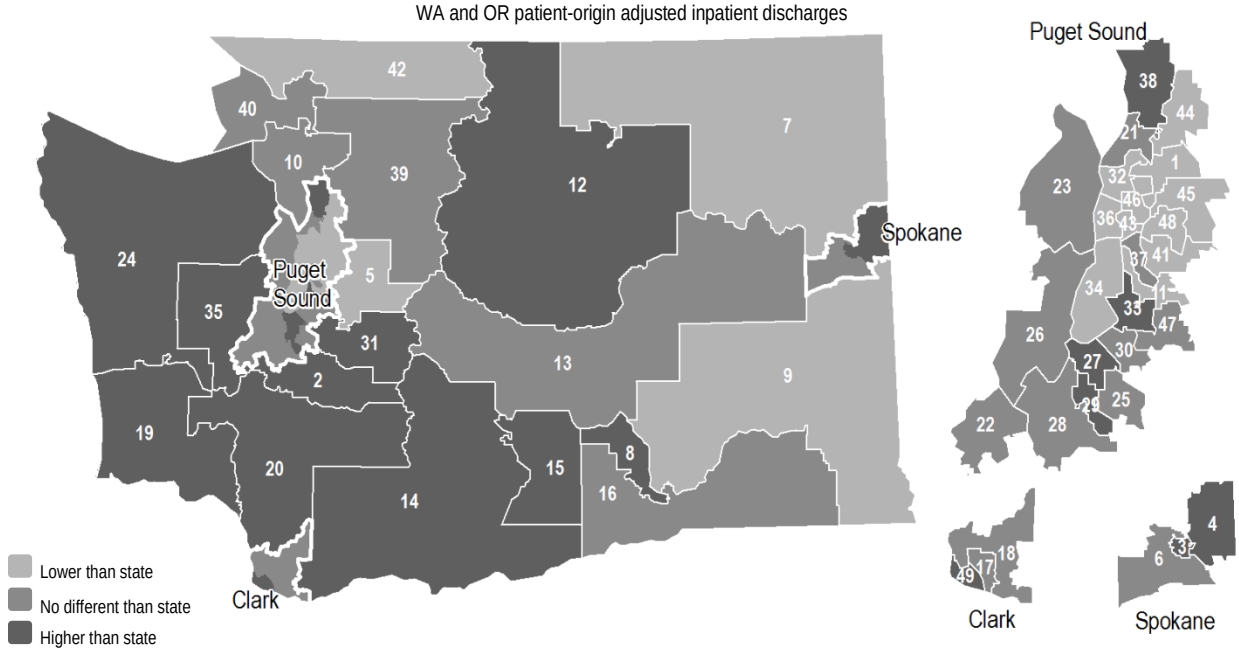
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Diabetes Short-Term Complications (PQI 1)

Figure 24
Diabetes Short-Term Complications (PQI 1)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Short-term complications due to diabetes include life-threatening conditions such as ketoacidosis, hyperosmolarity and coma. These serious conditions are preventable through access to primary care providers and compliance with prescribed therapies. Inpatient stays for this PQI are included in the Diabetes Composite PQI as well as in the Chronic Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for short-term complications from diabetes among those ages 18 and older averaged 3,435 per year at an annual cost of $28 million.

As seen in Figure 24, the entire coastal region and nearly all of the southwest and south central sectors of the state have hospitalization rates that are higher than the state's. In addition, parts of the north and south Puget Sound region have high rates, as do the central Washington and Spokane City environs. Low rate sectors of the state are seen in the north central Puget Sound region and eastward toward Issaquah, as well as the north, northeast and southeast regions of the state.

In Figure 25, the 29th is shown to have the highest rate, 96 per 100,000 persons or twice the statewide rate of 49 per 100,000. Second highest is the 3rd at 93 per 100,000, followed by the 27th at 88. The 29th and 27th are adjacent to one another and include Lakewood and Tacoma. The 3rd incudes Spokane city. Annual costs in excess of what would be expected in these districts are $482 thousand in the 29th, $330 thousand in the 3rd and $519 thousand in the 27th.

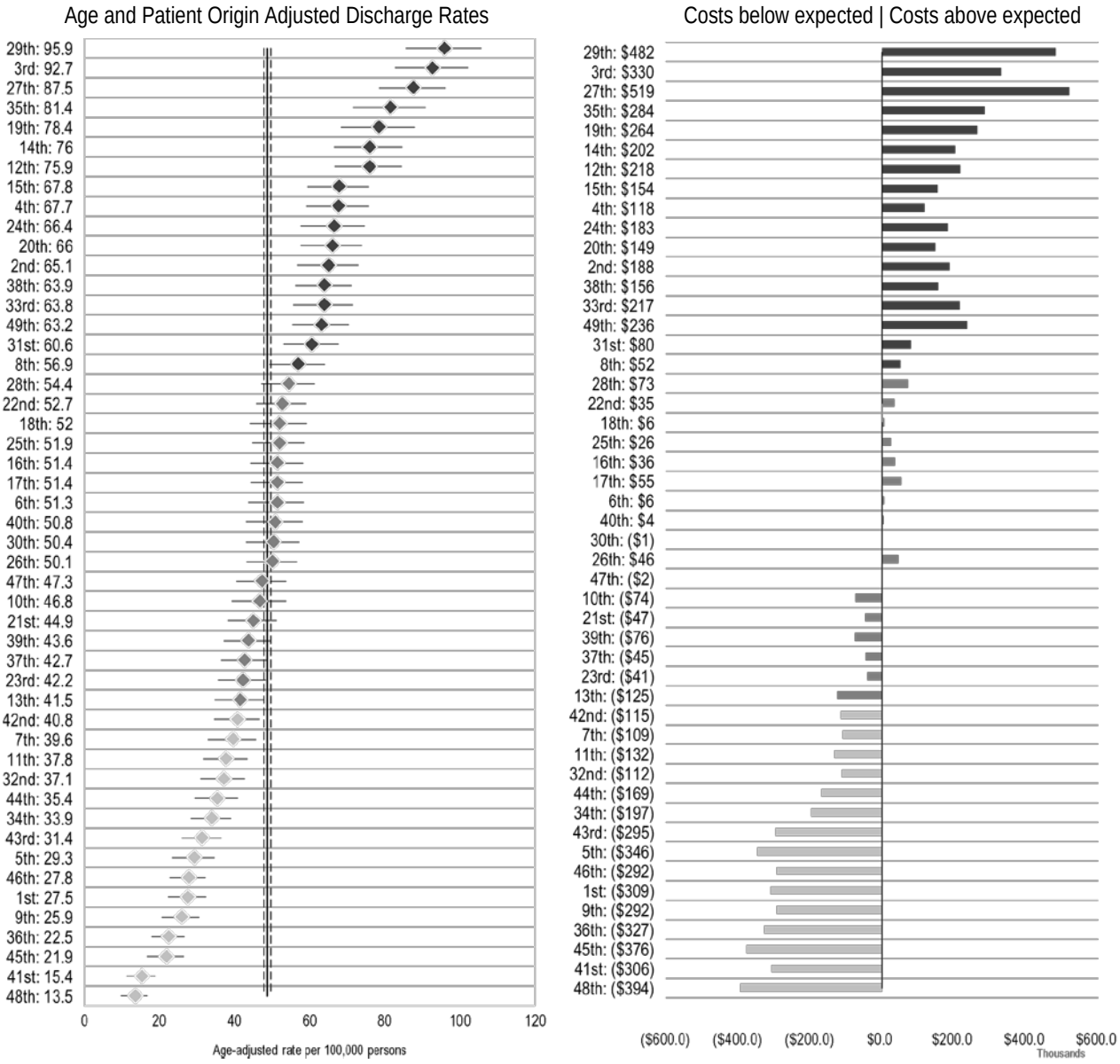
The lowest rate is in the 48th, 14 per 100,000 persons, or just slightly more than one-fourth of the state rate. Second lowest is the 41st at 15 per 100,000, and third is the 45th at 22. These three districts border one another and include Redmond, Bellevue and Kirkland. Savings, as compared to what would be expected, equal $394 thousand per year in the 48th, $306 thousand per year in the 41st and $376 thousand in the 45th.

Figure 25

Diabetes Short-Term Complications (PQI 1)

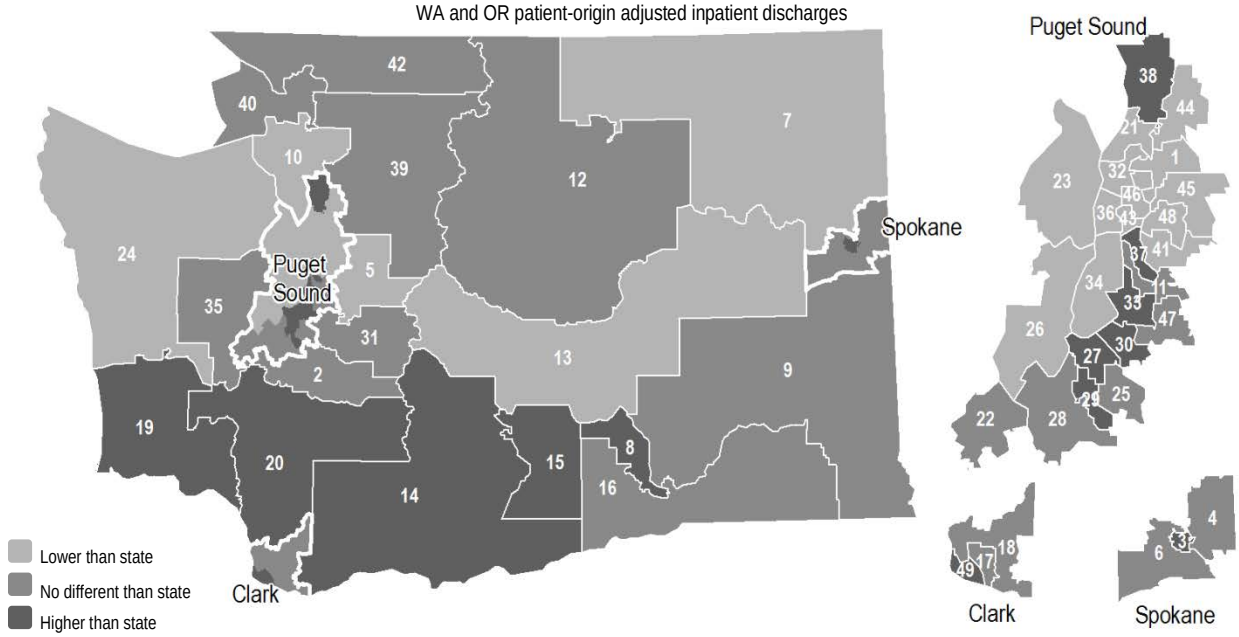
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Diabetes Long-Term Complications (PQI 3)

Figure 26
Diabetes Long-Term Complications (PQI 3)
Age-adjusted rates by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Serious long-term complications from diabetes include, among other conditions, damage to the heart and kidneys. Patients can minimize these complications through regular primary care visits and compliance with prescribed therapies. Inpatient stays for long-term complications are included in the Diabetes Composite PQI and in the Chronic Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for long-term complications from diabetes among those ages 18 and older averaged 3,286 per year at an average annual cost of $48.9 million.

As seen in Figure 26, all but two districts in the southwest and south central sectors of the state have rates higher than the state's, as do those districts in the south central Puget Sound region, and in the Everett and Spokane city environs. Districts with low rates span across the middle of the state and include the Olympic peninsula, Whidbey Island and the north Puget Sound region, and the central and northeastern sectors of the state.

In Figure 27, the 29th is shown to have the highest rate, 87 per 100,000 persons or twice the stat rate of 42 per 100,000. A close second is the 49th at 86 per 100,000. Third is the 15th at 75. These three districts are somewhat dispersed throughout the state: the 49th includes South Tacoma and Lakewood; the 49th, Vancouver; and, the 15th, Sunnyside. Cost above what would be expected equals $1.0 million per year in the 49th, $850 thousand in the 49th and $545 thousand in the 15th.

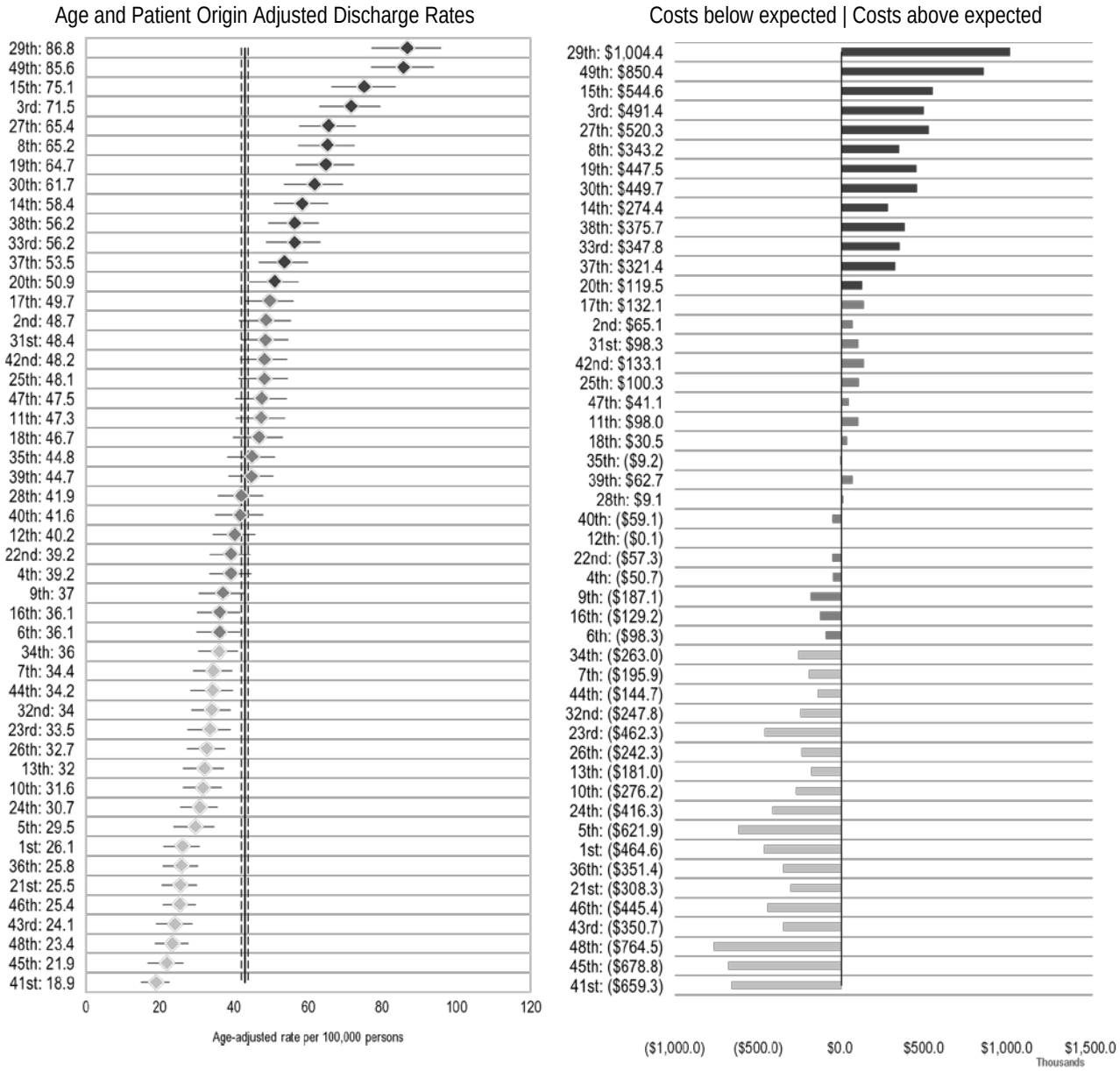
The lowest rate is in the 41st, 19 per 100,000 or less than half the state rate. Second lowest is the 45th, 22 per 100,000. Third is the 48th at 23 per 100,000. These three districts border one another and include Bellevue, Kirkland and Redmond. Savings, as compared to the expected, equal $659 thousand in the 41st, $679 thousand in the 45th and $764 thousand in the 48th.

Figure 27

Diabetes Long-Term Complications (PQI 3)

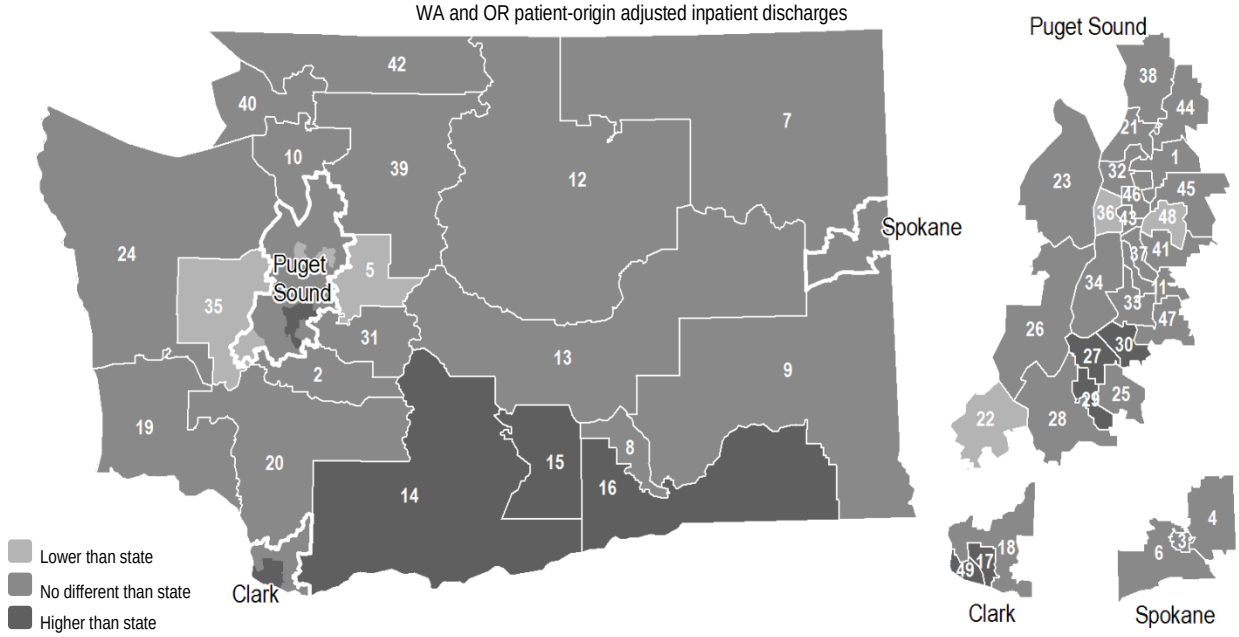
Age-adjusted rates and excess costs or savings by legislative district

2013-15 combined



Uncontrolled Diabetes (PQI 14)

Figure 28
Uncontrolled Diabetes (PQI 14)
SMRs by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



The case definition for uncontrolled diabetes is similar to, but narrower than, the case definition for short-term complications from diabetes, excluding, for instance, cases where the patient is in a coma. The conditions in both PQIs are preventable through access to primary care providers and compliance with prescribed therapies. Inpatient stays for uncontrolled diabetes are included in the Diabetes Composite PQI as well as in the Chronic Conditions Composite PQI.

For 2013-15 the number of inpatient discharges for uncontrolled diabetes among those ages 18 and older averaged 325 per year at an annual cost of $4 million. Because of the low number of stays, equaling no more than 40 cases for the three years combined in any of the districts, rather than computing age-adjusted rates, the ratio of observed to expected number of cases, also known as the SMR, was calculated. These SMRs are commonly used in instances of low case counts and do account for the differences in age distribution among the districts.

As seen in Figure 28, most districts have SMRs that do not differ from the expected. However, those districts across the southern border, together with a few in the south Puget Sound region, do have case counts higher than the expected. Conversely, those districts with lower than expected cases are somewhat dispersed and, while not forming any readily discernable clusters, they seem to be generally found in the central Puget Sound and adjoining districts.

In Figure 29, the 14th is seen to have the highest SMR, two-times the expected. The 29th and the 15th, second and third highest, have SMRs 1.7 times greater than expected. Two of those three are in the Yakima/Sunnyside environs, the 14th and the 15th. The 29th includes South Tacoma and Lakewood. Annual excess costs in those districts equal $42 thousand in the 14th, $29 thousand in the 29th and $22 thousand in the 15th.

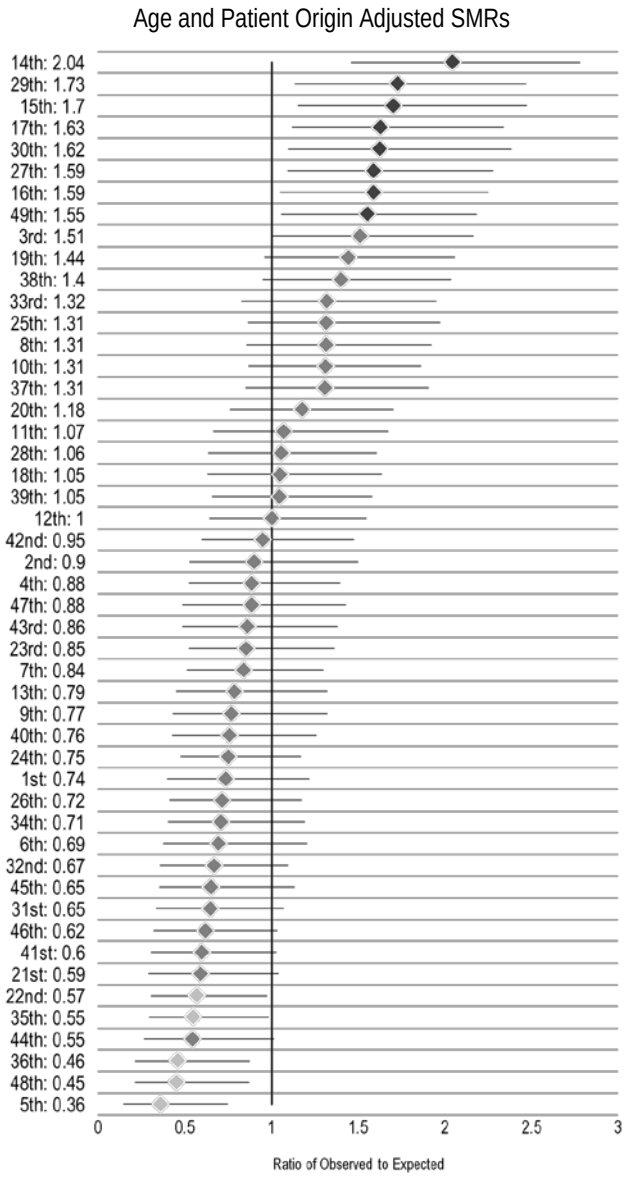
Districts with the lowest SMRs include the 5th with a case count of slightly more than one-third of the expected, and the 48th and the 36th with case counts less than half the expected. These three districts include Issaquah, Redmond and Ballard. Annual savings incurred in these districts are minimal: $11 thousand in the 5th, $300 in the 48th and $14 thousand in the 36th.

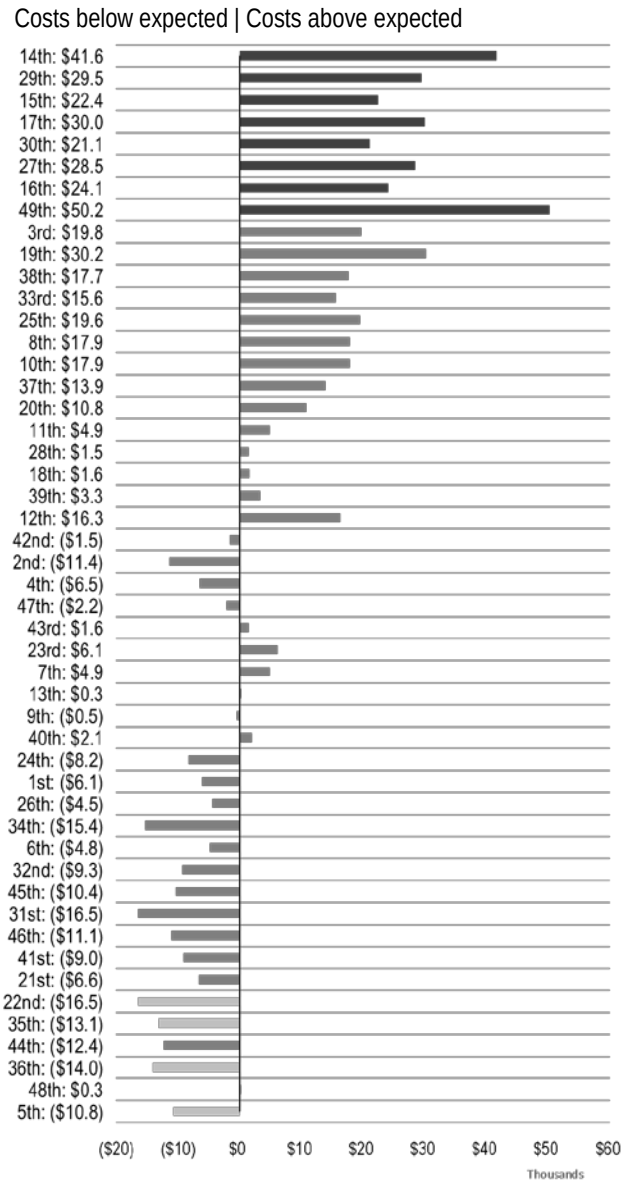
Figure 29

Uncontrolled Diabetes (PQI 14)

Observed to expected ratios (SMR) and excess costs or savings by legislative district

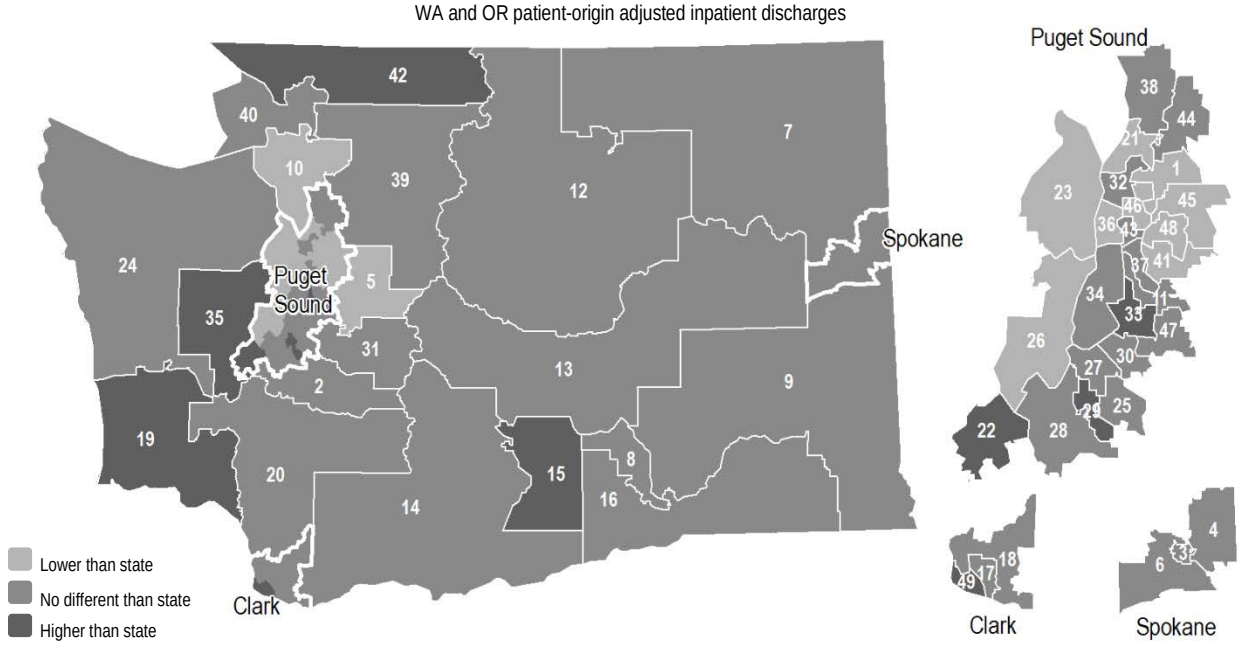
2013-15 combined





Lower-Extremity Amputation among Patients with Diabetes (PQI 16)

Figure 30
Lower-Extremity Amputation among Patients with Diabetes (PQI 16)
SMRs by legislative district, 2013-15
WA and OR patient-origin adjusted inpatient discharges



Lower-extremity amputations (LEA) is relatively common among people with diabetes, affecting up to 15 percent of that population.[4] Maintaining long-term proper glucose control through access to and compliance with prescribed therapies, proper diabetes education and appropriate foot care can prevent the conditions that lead to LEA. Hospitalizations for this condition are included in the Diabetes Composite PQI as well as in the Chronic Conditions Composite PQI.

For 2013-15 the number of inpatients discharges for LEA among people with diabetes who were ages 18 and older averaged 705 per year at an annual cost of $19 million. Because of the low number of stays, equaling less than 100 cases for the three years combined in any of the districts, rather than computing age-adjusted rates, the ratio of observed to expected number of cases, also known as the SMR, was calculated. These SMRs are commonly used in instances of low case counts and do account for the differences in age distribution among the districts.

As seen in Figure 30, the geographic distribution of districts with higher than the expected number cases do not readily appear to fall into a broader geographic pattern. However, those districts with lower than expected numbers of cases do appear to be generally clustered in the northern and eastern Puget Sound region, and including Whidbey Island to the north and the cascade foothills to the east.

In Figure 31, the 29th is found to have the highest SMR, two-times the expected, followed by the 19th, 1.8 times the expected, and the 15th, 1.7. These three district are somewhat dispersed and include the south Puget Sound region, the southwest coast, and south central Washington farmlands. Annual excess costs in these districts equal $366 thousand in the 29th, $253 thousand in the 19th and $144 thousand in the 15th.

The lowest SMRs are seen in the 41st and the 5th, each about one-third the expected. The 48th is the third lowest at about 40 percent of the expected. These three districts abut one another and include Bellevue, Issaquah and Redmond. The amount saved per year, compared to what would be expected, is $236 thousand in the 41st, $302 thousand in the 5th and $257 in the 48th.

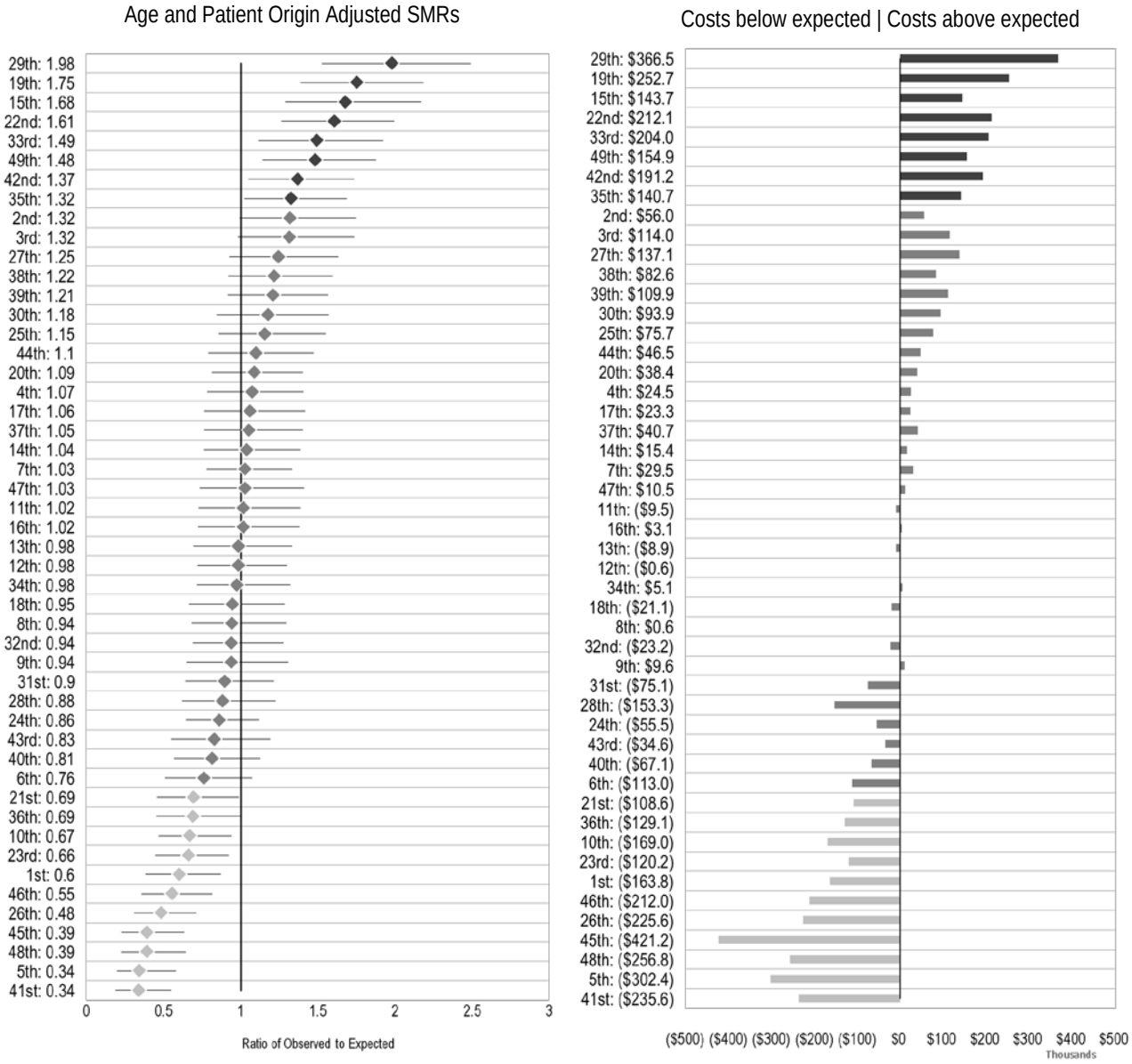
[4] Mayfield JA, Reiber GE, Sanders LJ, et al. Preventive foot care in people with diabetes. Diabetes Care 1998;21(12):2161-77.

Figure 31

Lower-Extremity Amputation among Patients with Diabetes (PQI 16)

Observed to expected ratios (SMR) and excess costs or savings by legislative district

2013-15 combined



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Prevention Quality Indicators

Tabular Listing of Age-Adjusted Rates or Ratios of the Observed to Expected

by
Legislative Districts

2013-15 combined
Washington and Oregon Inpatient Hospital Discharges
Of Washington State Residents

PQI 01 Diabetes Short-Term Complications Discharge Rate

District	Rate (95% CI)	Excess cost or savings
1st	27.5 (22.6, 32.9)	($309,371)
2nd	65.1 (57.2, 73.5)	$187,639
3rd	92.7 (83.2, 102.7)	$329,671
4th	67.7 (59.7, 76.2)	$117,910
5th	29.3 (23.9, 35.2)	($345,766)
6th	51.3 (44.2, 59)	$5,874
7th	39.6 (33.3, 46.3)	($108,776)
8th	56.9 (49.8, 64.6)	$51,871
9th	25.9 (21.1, 31.2)	($291,581)
10th	46.8 (39.8, 54.4)	($74,486)
11th	37.8 (32.1, 43.8)	($132,238)
12th	75.9 (67.3, 85)	$217,832
13th	41.5 (35.2, 48.3)	($124,749)
14th	76 (67.1, 85.3)	$202,356
15th	67.8 (59.9, 76.2)	$153,811
16th	51.4 (44.7, 58.7)	$36,375
17th	51.4 (44.8, 58.5)	$54,809
18th	52 (44.6, 59.8)	$6,152
19th	78.4 (68.9, 88.5)	$264,418
20th	66 (58, 74.4)	$148,629
21st	44.9 (38.6, 51.7)	($47,093)
22nd	52.7 (46.1, 59.6)	$34,718
23rd	42.2 (36, 48.8)	($41,298)
24th	66.4 (58.2, 75.3)	$182,542
25th	51.9 (45.2, 59.1)	$25,783
26th	50.1 (43.5, 57.1)	$46,169
27th	87.5 (78.9, 96.6)	$519,394
28th	54.4 (47.5, 61.8)	$72,801
29th	95.9 (86.2, 106.2)	$481,650
30th	50.4 (43.5, 57.7)	($1,162)
31st	60.6 (53.4, 68.1)	$80,136
32nd	37.1 (31.5, 43.1)	($112,215)
33rd	63.8 (56.2, 71.9)	$216,610
34th	33.9 (28.7, 39.5)	($197,067)
35th	81.4 (72.1, 91.4)	$284,146
36th	22.5 (18.3, 27.1)	($327,256)
37th	42.7 (36.8, 49)	($45,166)
38th	63.9 (56.7, 71.6)	$155,978
39th	43.6 (37.6, 50.1)	($75,829)
40th	50.8 (43.6, 58.6)	$4,289
41st	15.4 (11.7, 19.6)	($306,131)
42nd	40.8 (35, 47.1)	($114,740)
43rd	31.4 (26.2, 37)	($294,657)
44th	35.4 (29.8, 41.5)	($168,761)
45th	21.9 (17.2, 27.1)	($376,193)
46th	27.8 (23.2, 32.7)	($292,386)
47th	47.3 (40.9, 54.2)	($1,769)
48th	13.5 (10.2, 17.3)	($394,382)
49th	63.2 (55.8, 71)	$235,821
State	48.8 (47.8, 49.7)	--

PQI 03 Diabetes Long-Term Complications Discharge Rate

District	Rate (95% CI)	Excess cost or savings
1st	26.1 (21.4, 31.2)	($464,606)
2nd	48.7 (41.9, 55.9)	$65,115
3rd	71.5 (63.5, 80)	$491,367
4th	39.2 (33.6, 45.1)	($50,694)
5th	29.5 (24.3, 35.3)	($621,893)
6th	36.1 (30.4, 42.2)	($98,346)
7th	34.4 (29.3, 39.9)	($195,868)
8th	65.2 (57.7, 73)	$343,168
9th	37 (31, 43.4)	($187,145)
10th	31.6 (26.6, 37)	($276,236)
11th	47.3 (40.9, 54.2)	$98,000
12th	40.2 (34.7, 46.2)	($119)
13th	32 (26.7, 37.8)	($180,997)
14th	58.4 (51.2, 65.9)	$274,359
15th	75.1 (66.7, 84)	$544,615
16th	36.1 (30.5, 42.1)	($129,179)
17th	49.7 (43.2, 56.6)	$132,126
18th	46.7 (40.1, 53.7)	$30,458
19th	64.7 (57.1, 72.8)	$447,493
20th	50.9 (44.5, 57.8)	$119,465
21st	25.5 (21, 30.5)	($308,334)
22nd	39.2 (33.9, 44.9)	($57,342)
23rd	33.5 (28, 39.5)	($462,264)
24th	30.7 (25.9, 36)	($416,325)
25th	48.1 (41.8, 55)	$100,305
26th	32.7 (27.7, 38)	($242,302)
27th	65.4 (58, 73.3)	$520,262
28th	41.9 (36, 48.3)	$9,057
29th	86.8 (77.5, 96.5)	$1,004,449
30th	61.7 (54, 69.9)	$449,706
31st	48.4 (42.3, 55)	$98,270
32nd	34 (28.9, 39.4)	($247,761)
33rd	56.2 (49.1, 63.9)	$347,780
34th	36 (30.8, 41.6)	($263,010)
35th	44.8 (38.7, 51.4)	($9,235)
36th	25.8 (21.2, 30.9)	($351,440)
37th	53.5 (47.1, 60.4)	$321,420
38th	56.2 (49.6, 63.3)	$375,703
39th	44.7 (38.9, 50.9)	$62,741
40th	41.6 (35.4, 48.3)	($59,051)
41st	18.9 (15.2, 23.1)	($659,272)
42nd	48.2 (42.1, 54.7)	$133,125
43rd	24.1 (19.5, 29.2)	($350,684)
44th	34.2 (28.7, 40.1)	($144,672)
45th	21.9 (17.3, 27)	($678,778)
46th	25.4 (21.1, 30)	($445,423)
47th	47.5 (40.8, 54.7)	$41,052
48th	23.4 (19, 28.1)	($764,465)
49th	85.6 (77.3, 94.3)	$850,410
State	42.9 (42, 43.8)	--

PQI 05 Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Discharge Rate

District	Rate (95% CI)	Excess cost or savings
1st	60.9 (53.3, 69.1)	($639,448)
2nd	118.7 (107.9, 130.1)	$355,165
3rd	182.2 (169.5, 195.5)	$909,584
4th	146.2 (135.7, 157.1)	$673,622
5th	61.2 (52.8, 70.2)	($581,411)
6th	97.3 (88.1, 106.9)	($19,488)
7th	113.8 (105.3, 122.6)	$396,542
8th	162.7 (151.4, 174.5)	$894,640
9th	88.1 (79, 97.6)	($142,521)
10th	66.1 (59.7, 72.8)	($510,339)
11th	73.3 (64.8, 82.2)	($377,721)
12th	75.7 (68.5, 83.2)	($348,110)
13th	96.9 (88, 106.2)	$30,583
14th	148.5 (137.8, 159.7)	$781,760
15th	165.4 (152.7, 178.6)	$642,894
16th	107.7 (98.1, 117.7)	$135,817
17th	115.6 (105.5, 126.2)	$209,701
18th	101.9 (92.2, 112.2)	$19,121
19th	130.4 (120.5, 140.7)	$555,408
20th	91.2 (83.4, 99.2)	($88,198)
21st	42.9 (36.7, 49.5)	($926,134)
22nd	64.4 (57.8, 71.3)	($505,104)
23rd	37.8 (32.7, 43.2)	($1,079,636)
24th	71.1 (64.7, 77.9)	($820,449)
25th	144.1 (132.8, 155.9)	$684,194
26th	95.8 (87.6, 104.3)	$3,769
27th	210.9 (197.5, 224.9)	$1,689,689
28th	131.9 (121.3, 142.8)	$432,783
29th	237.6 (222.4, 253.2)	$1,795,284
30th	151.2 (138.8, 164)	$575,652
31st	116.4 (106.3, 126.9)	$238,359
32nd	55 (48.8, 61.5)	($786,487)
33rd	92.2 (83.1, 101.8)	($26,225)
34th	68.9 (61.5, 76.7)	($464,946)
35th	86.6 (78.9, 94.7)	($171,385)
36th	63.7 (55.9, 71.9)	($502,057)
37th	79.1 (71.3, 87.3)	($244,206)
38th	54 (47.7, 60.8)	($522,172)
39th	109.3 (99.9, 119.2)	$164,171
40th	80.9 (72.9, 89.2)	($229,514)
41st	42.9 (37.3, 49)	($814,229)
42nd	78.9 (71.6, 86.7)	($217,185)
43rd	67.9 (59.5, 76.8)	($304,159)
44th	49.3 (42.1, 57)	($582,056)
45th	53.3 (45.8, 61.4)	($725,247)
46th	46.3 (40.4, 52.6)	($863,741)
47th	88.8 (79.2, 99.1)	($122,962)
48th	52.6 (46.1, 59.5)	($583,362)
49th	160.2 (149.2, 171.7)	$1,028,649
State	96.5 (95.2, 97.8)	--

PQI 07 Hypertension Observed to Expected Ratio

District	O/E (95% CI)	Excess cost or savings
1st	0.6 (0.5, 0.8)	($81,810)
2nd	1.6 (1.3, 1.9)	$122,985
3rd	1.2 (0.9, 1.4)	$29,216
4th	1.8 (1.5, 2.1)	$166,337
5th	0.6 (0.4, 0.8)	($59,376)
6th	1 (0.8, 1.2)	($3,839)
7th	0.5 (0.4, 0.7)	($106,721)
8th	1.3 (1, 1.5)	$62,110
9th	0.5 (0.3, 0.7)	($98,243)
10th	0.6 (0.5, 0.8)	($111,154)
11th	0.8 (0.6, 1)	($34,825)
12th	0.9 (0.7, 1.1)	($27,926)
13th	0.8 (0.6, 1)	($28,236)
14th	1.2 (1, 1.5)	$44,266
15th	1.5 (1.2, 1.8)	$70,492
16th	0.9 (0.7, 1.1)	($27,436)
17th	1.7 (1.4, 2)	$147,399
18th	1.5 (1.2, 1.8)	$95,465
19th	0.8 (0.6, 1)	($48,380)
20th	1.3 (1.1, 1.6)	$80,654
21st	0.6 (0.5, 0.8)	($63,835)
22nd	0.7 (0.6, 0.9)	($62,119)
23rd	0.9 (0.7, 1.2)	($31,489)
24th	0.5 (0.4, 0.6)	($163,621)
25th	2 (1.7, 2.3)	$253,517
26th	1.3 (1.1, 1.6)	$77,774
27th	2.1 (1.8, 2.4)	$222,135
28th	1.8 (1.5, 2.1)	$172,801
29th	3.9 (3.4, 4.4)	$517,173
30th	1.5 (1.2, 1.8)	$76,139
31st	1.1 (0.9, 1.3)	$25,349
32nd	0.5 (0.4, 0.7)	($117,344)
33rd	1.2 (1, 1.5)	$38,285
34th	0.6 (0.4, 0.8)	($80,305)
35th	0.8 (0.7, 1.1)	($26,861)
36th	0.5 (0.4, 0.7)	($84,140)
37th	1.3 (1.1, 1.6)	$67,363
38th	0.7 (0.5, 0.9)	($63,132)
39th	0.7 (0.5, 0.9)	($72,607)
40th	0.7 (0.5, 0.9)	($67,439)
41st	0.3 (0.2, 0.5)	($152,210)
42nd	0.4 (0.3, 0.6)	($75,708)
43rd	0.5 (0.4, 0.7)	($84,892)
44th	0.7 (0.5, 0.9)	($62,135)
45th	0.5 (0.3, 0.6)	($125,715)
46th	0.4 (0.3, 0.5)	($112,910)
47th	0.9 (0.6, 1.1)	($24,965)
48th	0.5 (0.3, 0.6)	($124,254)
49th	1.9 (1.6, 2.2)	$226,751
State	1	--

PQI 08 Heart Failure Discharge Rate

District	Rate (95% CI)	Excess cost or savings
1st	149.4 (137.1, 162.3)	($697,702)
2nd	274.1 (256.2, 292.6)	$1,292,150
3rd	192.8 (179.9, 206.1)	$195,813
4th	175.7 (164.2, 187.7)	($58,968)
5th	195.1 (178.8, 212.1)	($363,728)
6th	143.3 (132.3, 154.7)	($478,309)
7th	112 (103.4, 120.9)	($1,324,054)
8th	229.5 (215.9, 243.5)	$656,535
9th	113.9 (103.4, 124.8)	($877,783)
10th	131.3 (122.1, 140.9)	($1,111,616)
11th	219.7 (204.5, 235.5)	$517,236
12th	140.4 (130.6, 150.5)	($760,026)
13th	119.2 (109.3, 129.6)	($867,797)
14th	198.6 (186.2, 211.4)	$268,106
15th	250.6 (234.6, 267.1)	$795,932
16th	180 (167.7, 192.7)	($38,338)
17th	259.3 (243.8, 275.2)	$1,321,892
18th	253 (236.6, 270)	$916,752
19th	228.8 (215.7, 242.2)	$856,017
20th	232.9 (220, 246.1)	$1,132,722
21st	154.3 (142.4, 166.7)	($505,301)
22nd	143.5 (133.8, 153.6)	($710,555)
23rd	129.5 (120.1, 139.4)	($1,043,528)
24th	142.1 (133.4, 151.1)	($1,008,441)
25th	252.9 (237.7, 268.7)	$1,245,194
26th	161.7 (150.6, 173.1)	($543,157)
27th	291.5 (275.3, 308.1)	$1,854,654
28th	193.7 (181.1, 206.6)	$183,422
29th	353.9 (334.6, 373.8)	$2,553,969
30th	276.4 (259.2, 294.3)	$1,292,181
31st	236.8 (221.7, 252.4)	$786,403
32nd	149.6 (139.3, 160.2)	($833,005)
33rd	231.9 (217.2, 247.1)	$937,988
34th	151.7 (140.6, 163.2)	($565,629)
35th	160.2 (149.2, 171.7)	($435,239)
36th	125.4 (114.2, 137.2)	($1,570,684)
37th	185.2 (173.1, 197.7)	$374,254
38th	205 (192.1, 218.4)	$438,424
39th	179.3 (166.6, 192.4)	($120,633)
40th	140.1 (129.9, 150.7)	($858,879)
41st	120.1 (110.6, 130)	($1,332,441)
42nd	143.6 (133.5, 154)	($718,461)
43rd	149.9 (137.2, 163.2)	($484,197)
44th	188.2 (173.2, 203.8)	($41,874)
45th	122 (110.2, 134.3)	($1,292,896)
46th	133.7 (123.5, 144.3)	($1,093,547)
47th	250.8 (233.6, 268.6)	$718,677
48th	126.6 (116.5, 137)	($857,362)
49th	273.3 (258.8, 288.2)	$1,985,215
State	181.3 (179.5, 183.1)	--

PQI 10 Dehydration Discharge Rate

District	Rate (95% CI)	Excess cost or savings
1st	47.2 (40.5, 54.4)	($100,160)
2nd	79.1 (69.6, 89.2)	$172,092
3rd	72.9 (65, 81.3)	$174,614
4th	64.1 (56.9, 71.7)	$54,474
5th	58.2 (49.8, 67.2)	($28,035)
6th	60.9 (53.7, 68.5)	$42,336
7th	45.2 (39.5, 51.3)	($149,050)
8th	81.9 (73.7, 90.5)	$271,506
9th	37.3 (31.4, 43.6)	($198,782)
10th	40.8 (35.5, 46.5)	($216,322)
11th	63.1 (55.1, 71.7)	$40,872
12th	39.8 (34.4, 45.5)	($213,828)
13th	41.5 (35.7, 47.9)	($149,747)
14th	67.8 (60.5, 75.4)	$142,710
15th	76 (67.3, 85.1)	$172,061
16th	56.8 (49.9, 64.1)	$15,470
17th	82.2 (73.5, 91.3)	$249,799
18th	73.6 (64.9, 82.8)	$125,227
19th	74.3 (66.6, 82.3)	$256,041
20th	68.2 (61.1, 75.8)	$123,592
21st	40.2 (34.3, 46.7)	($150,518)
22nd	52.4 (46.3, 58.8)	($63,129)
23rd	53.7 (47.5, 60.3)	($11,214)
24th	38.4 (33.7, 43.5)	($354,440)
25th	90.3 (81.3, 99.9)	$394,945
26th	72.5 (65, 80.3)	$203,727
27th	76.1 (67.9, 84.7)	$229,560
28th	61.5 (54.5, 69)	$85,706
29th	104.1 (93.6, 115.1)	$441,195
30th	63.6 (55.5, 72.1)	$80,861
31st	66.4 (58.6, 74.5)	$111,717
32nd	39.9 (34.6, 45.7)	($222,527)
33rd	63.6 (55.9, 71.7)	$66,355
34th	43 (37.1, 49.3)	($167,630)
35th	55 (48.5, 62)	($878)
36th	42.3 (36, 49.1)	($162,636)
37th	45.1 (39.2, 51.5)	($107,720)
38th	52.2 (45.8, 59.1)	($30,619)
39th	45.4 (39.3, 52.1)	($114,306)
40th	47.6 (41.3, 54.4)	($102,666)
41st	39.3 (33.8, 45.1)	($189,273)
42nd	42.7 (37.1, 48.6)	($141,417)
43rd	42.7 (36.1, 49.7)	($133,152)
44th	50.7 (43.2, 58.8)	($64,985)
45th	46.5 (39.5, 54)	($122,869)
46th	34.3 (29.3, 39.8)	($281,947)
47th	60.9 (52.7, 69.8)	$17,414
48th	46.9 (40.7, 53.4)	($116,289)
49th	75.2 (67.6, 83.1)	$241,867
State	55.8 (54.9, 56.8)	--

PQI 11 Bacterial Pneumonia Discharge Rate

District	Rate (95% CI)	Excess cost or savings
1st	82.8 (73.7, 92.4)	($473,163)
2nd	132.9 (120.7, 145.8)	$218,217
3rd	158.3 (146.5, 170.5)	$513,128
4th	146.1 (135.4, 157.3)	$414,172
5th	97.1 (86.1, 108.8)	($367,272)
6th	126.7 (116.2, 137.6)	$111,736
7th	167.6 (156.7, 178.8)	$1,048,918
8th	138.1 (127.5, 149.1)	$300,631
9th	148.1 (136, 160.6)	$399,161
10th	141.3 (131.5, 151.4)	$508,878
11th	87 (77.6, 97)	($325,025)
12th	118.6 (109.5, 128)	$109,352
13th	145 (133.9, 156.6)	$465,458
14th	163.8 (152.3, 175.8)	$688,019
15th	191.8 (177.9, 206.2)	$778,725
16th	126.7 (116.4, 137.5)	$168,516
17th	134.1 (123, 145.7)	$278,987
18th	124.7 (113.2, 136.7)	$23,353
19th	204.3 (191.9, 217.1)	$1,997,535
20th	102.6 (94, 111.6)	($298,380)
21st	68.7 (61, 76.9)	($670,472)
22nd	86.4 (78.8, 94.4)	($509,731)
23rd	66.5 (59.6, 73.7)	($1,025,409)
24th	129.6 (120.6, 138.9)	$146,055
25th	123.8 (113.2, 134.9)	$154,465
26th	119.4 (109.8, 129.3)	($15,480)
27th	145.6 (134.4, 157.3)	$495,050
28th	107.9 (98.5, 117.8)	($142,162)
29th	185.4 (171.4, 199.9)	$937,688
30th	156.3 (143.2, 169.9)	$431,070
31st	127 (116.2, 138.3)	$127,314
32nd	71.5 (64.4, 79)	($894,710)
33rd	112.7 (102.4, 123.4)	($83,140)
34th	75 (67.2, 83.3)	($651,501)
35th	143.4 (132.8, 154.5)	$526,907
36th	52.3 (45.2, 59.9)	($1,042,584)
37th	59.7 (52.9, 67)	($909,053)
38th	94.4 (85.7, 103.6)	($225,238)
39th	143.9 (132.6, 155.6)	$388,811
40th	135 (124.7, 145.7)	$313,637
41st	61 (54.1, 68.2)	($747,810)
42nd	127.4 (117.8, 137.5)	$178,160
43rd	59.3 (51.5, 67.6)	($753,782)
44th	83.8 (74.1, 94.1)	($349,337)
45th	76.6 (67.5, 86.3)	($559,455)
46th	62.4 (55.5, 69.7)	($948,191)
47th	104.8 (93.8, 116.4)	($191,458)
48th	78.9 (70.9, 87.4)	($488,631)
49th	140.3 (130, 151)	$503,666
State	115.9 (114.5, 117.4)	--

PQI 12 Urinary Tract Infection Discharge Rate

District	Rate (95% CI)	Excess cost or savings
1st	62.9 (54.9, 71.5)	($84,400)
2nd	80.1 (70.4, 90.5)	$77,165
3rd	70.5 (62.8, 78.7)	$23,159
4th	62.7 (55.7, 70.1)	($83,067)
5th	69.5 (59.8, 79.8)	($97,550)
6th	57.9 (50.8, 65.4)	($149,799)
7th	70 (63, 77.5)	($123)
8th	92.6 (83.8, 101.7)	$239,709
9th	71.8 (63.5, 80.6)	$17,861
10th	68.3 (61.4, 75.6)	($39,691)
11th	71.4 (62.6, 80.7)	($32,438)
12th	61.1 (54.5, 68.1)	($160,876)
13th	64.7 (57.4, 72.5)	($57,691)
14th	84 (75.7, 92.7)	$152,069
15th	120.5 (109.5, 132.1)	$404,560
16th	76.1 (68.1, 84.5)	$49,066
17th	84.5 (75.7, 93.9)	$131,982
18th	70.5 (61.7, 79.8)	($33,947)
19th	84.7 (76.8, 93)	$265,182
20th	64.5 (57.6, 71.8)	($113,440)
21st	59.8 (52.4, 67.6)	($106,901)
22nd	50.2 (44.4, 56.4)	($288,776)
23rd	42.5 (37, 48.4)	($427,951)
24th	52.5 (46.9, 58.3)	($366,252)
25th	83.5 (74.8, 92.7)	$152,569
26th	74 (66.3, 82.1)	$4,387
27th	104.6 (95, 114.7)	$392,891
28th	80.9 (72.8, 89.5)	$132,367
29th	130.6 (118.8, 143)	$642,597
30th	97.7 (87.4, 108.6)	$245,512
31st	79.5 (70.9, 88.6)	$98,772
32nd	59.9 (53.5, 66.6)	($142,477)
33rd	75.3 (66.9, 84.2)	$15,941
34th	56.6 (49.8, 63.8)	($172,359)
35th	72 (64.4, 79.9)	$34,934
36th	50.4 (43.4, 57.8)	($179,783)
37th	51.6 (45.2, 58.4)	($217,294)
38th	68 (60.6, 76)	($21,063)
39th	80.2 (71.7, 89.2)	$112,837
40th	72.9 (65.3, 80.9)	$34,574
41st	58 (51.3, 65)	($123,545)
42nd	78.3 (70.6, 86.3)	$81,300
43rd	48 (41.1, 55.5)	($230,081)
44th	66.7 (57.9, 76.2)	($31,498)
45th	62.6 (54.2, 71.6)	($94,545)
46th	56.4 (49.9, 63.3)	($155,658)
47th	78.4 (68.8, 88.6)	$52,097
48th	79.4 (71.5, 87.7)	$98,771
49th	84.7 (76.6, 93.2)	$186,208
State	70.2 (69.1, 71.3)	--

PQI 14 Uncontrolled Diabetes Observed to Expected Ratio

District	O/E (95% CI)	Excess cost or savings
1st	0.7 (0.4, 1.2)	($6,116)
2nd	0.9 (0.5, 1.5)	($11,362)
3rd	1.5 (1, 2.2)	$19,751
4th	0.9 (0.5, 1.4)	($6,512)
5th	0.4 (0.1, 0.7)	($10,777)
6th	0.7 (0.4, 1.2)	($4,824)
7th	0.8 (0.5, 1.3)	$4,917
8th	1.3 (0.9, 1.9)	$17,898
9th	0.8 (0.4, 1.3)	($526)
10th	1.3 (0.9, 1.9)	$17,873
11th	1.1 (0.7, 1.7)	$4,901
12th	1 (0.6, 1.5)	$16,271
13th	0.8 (0.4, 1.3)	$256
14th	2 (1.5, 2.8)	$41,606
15th	1.7 (1.2, 2.5)	$22,449
16th	1.6 (1, 2.2)	$24,065
17th	1.6 (1.1, 2.3)	$29,954
18th	1 (0.6, 1.6)	$1,576
19th	1.4 (1, 2.1)	$30,236
20th	1.2 (0.8, 1.7)	$10,847
21st	0.6 (0.3, 1)	($6,604)
22nd	0.6 (0.3, 1)	($16,491)
23rd	0.9 (0.5, 1.4)	$6,113
24th	0.8 (0.5, 1.2)	($8,243)
25th	1.3 (0.9, 2)	$19,610
26th	0.7 (0.4, 1.2)	($4,514)
27th	1.6 (1.1, 2.3)	$28,468
28th	1.1 (0.6, 1.6)	$1,505
29th	1.7 (1.1, 2.5)	$29,453
30th	1.6 (1.1, 2.4)	$21,104
31st	0.6 (0.3, 1.1)	($16,468)
32nd	0.7 (0.4, 1.1)	($9,298)
33rd	1.3 (0.8, 2)	$15,571
34th	0.7 (0.4, 1.2)	($15,355)
35th	0.5 (0.3, 1)	($13,142)
36th	0.5 (0.2, 0.9)	($14,050)
37th	1.3 (0.8, 1.9)	$13,916
38th	1.4 (0.9, 2)	$17,684
39th	1 (0.7, 1.6)	$3,343
40th	0.8 (0.4, 1.3)	$2,052
41st	0.6 (0.3, 1)	($9,013)
42nd	1 (0.6, 1.5)	($1,535)
43rd	0.9 (0.5, 1.4)	$1,558
44th	0.5 (0.3, 1)	($12,400)
45th	0.7 (0.4, 1.1)	($10,365)
46th	0.6 (0.3, 1)	($11,068)
47th	0.9 (0.5, 1.4)	($2,195)
48th	0.4 (0.2, 0.9)	$271
49th	1.6 (1.1, 2.2)	$50,190
State	1	--

PQI 15 Asthma in Younger Adults Observed to Expected Ratio

District	O/E (95% CI)	Excess cost or savings
1st	0.7 (0.4, 1.1)	($23,833)
2nd	1.1 (0.7, 1.5)	$2,997
3rd	1.7 (1.3, 2.2)	$41,293
4th	1.9 (1.4, 2.5)	$42,369
5th	0.5 (0.3, 0.8)	($34,760)
6th	1.2 (0.8, 1.6)	$9,115
7th	0.9 (0.5, 1.3)	$1,540
8th	1 (0.7, 1.5)	$8,744
9th	0.5 (0.3, 0.7)	($35,823)
10th	1.1 (0.7, 1.6)	$4,183
11th	0.8 (0.5, 1.1)	($13,806)
12th	0.7 (0.5, 1.1)	($14,404)
13th	0.6 (0.4, 1)	($28,647)
14th	2 (1.5, 2.6)	$65,395
15th	1.2 (0.9, 1.7)	$10,467
16th	0.4 (0.2, 0.7)	($37,045)
17th	1.6 (1.2, 2.1)	$37,196
18th	1 (0.6, 1.5)	($1,538)
19th	1.8 (1.3, 2.5)	$40,617
20th	1 (0.6, 1.4)	($3,617)
21st	1 (0.7, 1.4)	($17,878)
22nd	0.9 (0.6, 1.3)	($5,082)
23rd	0.6 (0.4, 1.1)	($14,703)
24th	1.2 (0.8, 1.7)	$6,189
25th	1.6 (1.2, 2.2)	$83,974
26th	0.9 (0.6, 1.3)	($2,199)
27th	1.6 (1.2, 2.1)	$45,420
28th	1.8 (1.3, 2.3)	$70,609
29th	2.6 (2, 3.2)	$108,786
30th	2 (1.5, 2.5)	$66,761
31st	1.4 (1, 1.9)	$41,430
32nd	1.1 (0.8, 1.6)	$32,389
33rd	0.8 (0.5, 1.2)	($9,218)
34th	0.5 (0.3, 0.8)	($29,284)
35th	1.1 (0.7, 1.6)	$9,530
36th	0.2 (0.1, 0.3)	($265,646)
37th	0.7 (0.5, 1.1)	($17,089)
38th	0.9 (0.6, 1.3)	($10,508)
39th	0.9 (0.6, 1.3)	$1,330
40th	0.8 (0.5, 1.2)	($5,169)
41st	0.4 (0.2, 0.8)	($41,284)
42nd	0.9 (0.6, 1.3)	($6,937)
43rd	0.3 (0.2, 0.4)	($94,480)
44th	0.6 (0.4, 1)	($27,855)
45th	0.5 (0.3, 0.8)	($34,128)
46th	0.3 (0.2, 0.6)	($97,248)
47th	1.2 (0.9, 1.7)	$14,242
48th	0.3 (0.2, 0.6)	($40,310)
49th	1.7 (1.3, 2.2)	$73,320
State	1	--

PQI 16 Lower-Extremity Amputation among Patients w/Diabetes Observed to Expected Ratio

District	O/E (95% CI)	Excess cost or savings
1st	0.6 (0.4, 0.9)	($163,775)
2nd	1.3 (1, 1.8)	$56,012
3rd	1.3 (1, 1.7)	$114,000
4th	1.1 (0.8, 1.4)	$24,514
5th	0.3 (0.2, 0.6)	($302,422)
6th	0.8 (0.5, 1.1)	($112,978)
7th	1 (0.8, 1.3)	$29,495
8th	0.9 (0.7, 1.3)	$601
9th	0.9 (0.6, 1.3)	$9,560
10th	0.7 (0.5, 0.9)	($168,951)
11th	1 (0.7, 1.4)	($9,518)
12th	1 (0.7, 1.3)	($609)
13th	1 (0.7, 1.3)	($8,943)
14th	1 (0.8, 1.4)	$15,398
15th	1.7 (1.3, 2.2)	$143,745
16th	1 (0.7, 1.4)	$3,111
17th	1.1 (0.8, 1.4)	$23,305
18th	0.9 (0.7, 1.3)	($21,138)
19th	1.8 (1.4, 2.2)	$252,664
20th	1.1 (0.8, 1.4)	$38,419
21st	0.7 (0.5, 1)	($108,562)
22nd	1.6 (1.3, 2)	$212,147
23rd	0.7 (0.4, 0.9)	($120,228)
24th	0.9 (0.6, 1.1)	($55,488)
25th	1.2 (0.9, 1.6)	$75,709
26th	0.5 (0.3, 0.7)	($225,580)
27th	1.2 (0.9, 1.6)	$137,137
28th	0.9 (0.6, 1.2)	($153,310)
29th	2 (1.5, 2.5)	$366,490
30th	1.2 (0.8, 1.6)	$93,937
31st	0.9 (0.6, 1.2)	($75,121)
32nd	0.9 (0.7, 1.3)	($23,187)
33rd	1.5 (1.1, 1.9)	$203,994
34th	1 (0.7, 1.3)	$5,146
35th	1.3 (1, 1.7)	$140,741
36th	0.7 (0.5, 1)	($129,051)
37th	1.1 (0.8, 1.4)	$40,731
38th	1.2 (0.9, 1.6)	$82,570
39th	1.2 (0.9, 1.6)	$109,930
40th	0.8 (0.6, 1.1)	($67,131)
41st	0.3 (0.2, 0.5)	($235,643)
42nd	1.4 (1.1, 1.7)	$191,240
43rd	0.8 (0.5, 1.2)	($34,592)
44th	1.1 (0.8, 1.5)	$46,476
45th	0.4 (0.2, 0.6)	($421,245)
46th	0.6 (0.4, 0.8)	($211,973)
47th	1 (0.7, 1.4)	$10,541
48th	0.4 (0.2, 0.6)	($256,779)
49th	1.5 (1.1, 1.9)	$154,885
State	1	--

PQI 90 Prevention Quality Overall Composite

District	Rate (95% CI)	Excess cost or savings
1st	479.7 (457.6, 502.2)	($3,030,690)
2nd	844.4 (813.5, 875.8)	$2,558,120
3rd	889.1 (860.6, 918.1)	$2,853,373
4th	758.3 (733.3, 783.7)	$1,376,052
5th	558.8 (532, 586.4)	($2,396,853)
6th	607 (583.5, 630.9)	($561,484)
7th	607.2 (586, 628.7)	($786,696)
8th	866.5 (839.5, 893.9)	$2,967,254
9th	539.8 (516.7, 563.4)	($1,645,403)
10th	554 (533.8, 574.7)	($1,881,438)
11th	627.9 (602.3, 653.9)	($537,939)
12th	579.4 (558.3, 600.8)	($1,384,860)
13th	567.3 (545, 590)	($1,094,346)
14th	846.5 (819.7, 873.8)	$2,684,506
15th	996.1 (964.3, 1028.5)	$3,635,516
16th	662.2 (638.1, 686.7)	$325,965
17th	829.9 (802.1, 858.2)	$2,602,843
18th	765.5 (737, 794.6)	$1,043,757
19th	906.5 (879.1, 934.3)	$4,507,086
20th	715.6 (692.1, 739.4)	$1,115,403
21st	460.2 (439.5, 481.3)	($2,857,226)
22nd	516 (496.8, 535.6)	($2,281,339)
23rd	434.1 (415.8, 452.8)	($4,138,808)
24th	555.2 (535.8, 575)	($2,942,948)
25th	853.5 (825.3, 882.1)	$3,308,214
26th	642.1 (619.6, 665)	($295,940)
27th	1040.6 (1010.1, 1071.6)	$6,221,653
28th	726.9 (701.9, 752.3)	$1,170,307
29th	1299.3 (1262.3, 1336.8)	$8,838,350
30th	909.5 (878.3, 941.3)	$3,266,085
31st	773.4 (746.5, 800.8)	$1,559,451
32nd	471.6 (452.8, 490.8)	($3,639,478)
33rd	734.5 (708, 761.4)	$1,398,298
34th	484.8 (464.7, 505.2)	($2,844,900)
35th	674.5 (650.7, 698.7)	$120,156
36th	398 (378.2, 418.3)	($4,078,826)
37th	556 (534.8, 577.7)	($1,140,158)
38th	623.8 (601.1, 647)	($142,815)
39th	676.1 (651.6, 701)	$269,959
40th	595.3 (572.9, 618.2)	($892,683)
41st	368.4 (351.3, 385.9)	($4,543,325)
42nd	583.3 (562.3, 604.7)	($1,025,376)
43rd	442 (420.4, 464.1)	($2,906,610)
44th	534.7 (509.9, 560.1)	($1,676,530)
45th	423 (401.2, 445.4)	($3,980,079)
46th	400.9 (383.2, 419.1)	($4,599,689)
47th	713.1 (684.5, 742.3)	$391,620
48th	435.8 (416.7, 455.2)	($3,059,286)
49th	939.6 (912.2, 967.3)	$5,337,146
State	645 (641.7, 648.4)	--

PQI 91 Prevention Quality Acute Composite		
District	Rate (95% CI)	Excess cost or savings
1st	192.9 (178.8, 207.5)	($661,490)
2nd	292.2 (273.7, 311.3)	$473,910
3rd	301.8 (285.4, 318.5)	$699,363
4th	272.9 (258, 288.2)	$347,098
5th	224.8 (207.7, 242.5)	($447,651)
6th	245.5 (230.8, 260.6)	$773
7th	282.8 (268.6, 297.5)	$685,780
8th	312.5 (296.4, 329.1)	$842,544
9th	257.1 (241.2, 273.6)	$144,601
10th	250.4 (237.2, 264)	$130,513
11th	221.6 (206.2, 237.5)	($286,318)
12th	219.5 (206.9, 232.5)	($369,097)
13th	251.3 (236.5, 266.5)	$121,729
14th	315.6 (299.5, 332.2)	$943,604
15th	388.3 (368.3, 408.7)	$1,346,407
16th	259.6 (244.7, 275)	$233,692
17th	300.8 (284, 318.1)	$704,968
18th	268.7 (251.7, 286.3)	$119,048
19th	363.3 (346.5, 380.4)	$2,396,522
20th	235.3 (222, 249)	($215,684)
21st	168.7 (156.3, 181.6)	($846,935)
22nd	189 (177.5, 200.8)	($835,237)
23rd	162.7 (151.8, 174)	($1,349,515)
24th	220.5 (208.8, 232.5)	($725,597)
25th	297.7 (281.1, 314.7)	$758,386
26th	265.9 (251.4, 280.8)	$226,600
27th	326.3 (309.2, 343.8)	$1,149,887
28th	250.4 (236, 265.3)	$90,556
29th	420.1 (398.8, 441.9)	$2,032,207
30th	317.6 (298.9, 336.8)	$735,788
31st	272.9 (256.8, 289.4)	$352,280
32nd	171.3 (160.3, 182.8)	($1,207,892)
33rd	251.6 (236.1, 267.6)	$55,057
34th	174.6 (162.5, 187.1)	($1,003,557)
35th	270.4 (255.7, 285.6)	$478,652
36th	145 (133, 157.5)	($1,241,636)
37th	156.5 (145.3, 168.1)	($1,133,828)
38th	214.7 (201.3, 228.5)	($278,323)
39th	269.6 (254, 285.6)	$325,197
40th	255.5 (241.2, 270.3)	$187,066
41st	158.2 (147, 169.7)	($994,989)
42nd	248.4 (234.7, 262.4)	$69,851
43rd	150 (137.5, 163)	($1,081,845)
44th	201.2 (185.9, 217.2)	($411,071)
45th	185.7 (171.3, 200.7)	($763,982)
46th	153.1 (142.2, 164.4)	($1,295,334)
47th	244.1 (227.2, 261.7)	($93,256)
48th	205.2 (192.2, 218.6)	($446,097)
49th	300.2 (284.9, 315.9)	$967,711
State	242 (239.9, 244)	--

PQI 92 Prevention Quality Chronic Composite		
District	Rate (95% CI)	Excess cost or savings
1st	286.8 (269.9, 304.1)	($2,391,408)
2nd	552.1 (527.6, 577.3)	$2,158,605
3rd	587.4 (564.1, 611.1)	$2,154,886
4th	485.4 (465.4, 505.7)	$1,028,938
5th	334.1 (313.5, 355.3)	($2,057,254)
6th	361.5 (343.4, 380.2)	($592,600)
7th	324.3 (308.9, 340.2)	($1,500,231)
8th	553.9 (532.4, 575.9)	$2,133,404
9th	282.7 (266.1, 299.7)	($1,885,670)
10th	303.6 (288.4, 319.2)	($2,155,951)
11th	406.3 (386, 427.1)	($153,807)
12th	359.9 (343.1, 377.1)	($1,017,964)
13th	316 (299.3, 333.1)	($1,233,535)
14th	530.9 (509.6, 552.7)	$1,724,752
15th	607.9 (583.2, 633.1)	$2,275,870
16th	402.5 (383.7, 421.7)	$37,385
17th	529.1 (507.1, 551.6)	$1,921,697
18th	496.8 (474.1, 520.1)	$1,001,369
19th	543.2 (521.6, 565.3)	$2,172,561
20th	480.3 (461, 499.9)	$1,387,365
21st	291.5 (275.1, 308.3)	($2,029,259)
22nd	327 (311.7, 342.7)	($1,428,202)
23rd	271.4 (256.8, 286.4)	($2,767,760)
24th	334.7 (319.3, 350.5)	($2,255,935)
25th	555.8 (533.2, 578.9)	$2,585,464
26th	376.2 (359.1, 393.7)	($560,997)
27th	714.4 (689.2, 740)	$5,146,783
28th	476.5 (456.2, 497.2)	$1,113,981
29th	879.2 (849.1, 909.8)	$6,831,726
30th	591.9 (567, 617.4)	$2,571,296
31st	500.5 (479.1, 522.5)	$1,231,278
32nd	300.3 (285.2, 315.7)	($2,390,060)
33rd	482.9 (461.6, 504.6)	$1,452,395
34th	310.2 (294.3, 326.5)	($1,789,516)
35th	404.1 (385.5, 423.1)	($416,127)
36th	253 (237.3, 269.2)	($2,720,861)
37th	399.5 (381.6, 417.9)	$256,649
38th	409.1 (390.8, 427.9)	$177,884
39th	406.5 (387.8, 425.7)	($82,430)
40th	339.8 (322.7, 357.3)	($1,209,301)
41st	210.2 (197.3, 223.5)	($3,621,739)
42nd	335.2 (319.3, 351.4)	($1,232,733)
43rd	292 (274.5, 310)	($1,738,963)
44th	333.5 (314.2, 353.4)	($1,278,918)
45th	237.3 (221.1, 254.2)	($3,420,824)
46th	247.8 (233.9, 262.1)	($3,292,124)
47th	469 (446.1, 492.5)	$524,102
48th	230.6 (216.8, 244.8)	($2,818,201)
49th	639.4 (616.8, 662.4)	$4,454,581
State	403.1 (400.4, 405.7)	--

PQI 93 Prevention Quality Diabetes Composite		
District	Rate (95% CI)	Excess cost or savings
1st	59.7 (52.4, 67.4)	($869,946)
2nd	122.5 (111.5, 133.9)	$297,002
3rd	176.1 (163.2, 189.6)	$877,190
4th	116 (105.8, 126.6)	$79,440
5th	61.4 (53.6, 69.7)	($1,039,504)
6th	93 (83.5, 103)	($144,036)
7th	82.2 (73.7, 91.2)	($361,167)
8th	130.2 (119.4, 141.4)	$391,431
9th	68.6 (60.5, 77.2)	($585,583)
10th	86.6 (77.5, 96.3)	($359,310)
11th	92.5 (83.5, 102)	($89,006)
12th	122.4 (111.9, 133.4)	$218,555
13th	81.3 (72.6, 90.5)	($318,968)
14th	145.9 (134, 158.3)	$538,165
15th	155.5 (143.3, 168.1)	$742,911
16th	96.3 (87, 106.1)	($40,252)
17th	112.1 (102.3, 122.5)	$251,107
18th	107.1 (96.8, 117.9)	$4,831
19th	155.4 (142.7, 168.7)	$795,835
20th	125.1 (114.5, 136.2)	$305,611
21st	75.7 (67.6, 84.3)	($390,339)
22nd	99 (90.2, 108.2)	($1,339)
23rd	82.8 (74.1, 92)	($443,697)
24th	103.6 (93.7, 114)	($229,539)
25th	109.5 (99.7, 119.8)	$235,862
26th	88.3 (79.8, 97.3)	($238,853)
27th	162.8 (151, 175.1)	$1,213,155
28th	104.1 (94.5, 114.1)	$56,668
29th	197.3 (183.2, 211.9)	$1,714,360
30th	122.3 (111.5, 133.7)	$489,600
31st	115.9 (106.1, 126.2)	$113,697
32nd	77.2 (69.3, 85.6)	($414,404)
33rd	131.1 (120.1, 142.6)	$661,849
34th	76.1 (68.4, 84.2)	($478,713)
35th	132.8 (121.3, 144.8)	$257,797
36th	53.6 (46.9, 60.8)	($805,752)
37th	105.6 (96.3, 115.2)	$308,887
38th	130.6 (120.3, 141.4)	$613,867
39th	97.5 (88.6, 106.7)	($32,098)
40th	99.2 (89.3, 109.7)	($123,480)
41st	37.4 (31.8, 43.4)	($1,201,861)
42nd	98.4 (89.5, 107.8)	($1,716)
43rd	62.1 (54.6, 70)	($681,561)
44th	77.4 (69, 86.3)	($375,915)
45th	49.5 (42.3, 57.2)	($1,227,473)
46th	58.1 (51.5, 65)	($907,854)
47th	103 (93.2, 113.4)	$38,814
48th	40.7 (34.9, 47)	($1,186,179)
49th	159 (147.5, 171)	$1,147,616
State	99.4 (98.1, 100.8)	--